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CHECK LIST

of the

Forest Trees of the United States
Their Names and Ranges

By

GEORGE B. SUDWORTH

Dendrologist, Forest Service

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Issued March, 1927

CHECK LIST OF THE FOREST TREES OF THE UNITED STATES, THEIR NAMES AND RANGES

By GEORGE B. SUDWORTH, *Dendrologist, Forest Service*

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INTRODUCTION

This bulletin is a revision of the Check List of the Forest Trees of the United States published in 1898. The usefulness of the first edition appears to have been established not only among foresters, woodsmen, and wood users, but also in forest schools and other educational institutions. After a lapse of 27 years the necessity of issuing a revised edition has become urgent, particularly because of the enormous increase in our knowledge of North American forest trees and their distribution. Advances have been made in the standardizing of common names of trees; changes have taken place in technical names; new information regarding the geographical distribution or range of different trees has accumulated; new arborescent species have been established. The number of different sorts of trees known has increased to 862 species, 228 varieties, and 87 hybrids, a total of 1,177 different forms of trees, compared with 504 species, 80 varieties, and 20 hybrids, a total of 604 trees, enumerated in 1898. The large number of trees now known is due in part to the addition of newly discovered native and naturalized species, and in part to the segregation and naming of species and varieties previously confused.

Greater public interest in our forest resources, with a consequently greater desire to know trees, is being exhibited now than ever before. The need of helpful literature on North American trees has been

recognized, and during the past quarter of a century many popular books applying particularly to eastern United States have appeared. There is still need, however, for such literature dealing with the trees of other parts of the country. In addition to these popularly written books on trees, there are a number of technical works available, of which some deal with all of the plants (trees, shrubs, and herbs) of certain large sections of the country, and one or two are devoted only to the trees of North America (north of the Mexican boundary). Thousands of intelligent laymen, keenly desirous of knowing the trees of their locality, county, or State, are unable fully to help themselves by means of this literature, and chiefly because they have neither the time nor the opportunity to acquaint themselves with the technical language of such books. Obviously, it is difficult accurately and concisely to describe the distinguishing characteristics of plants in popular language. However, the writer is confident that a very large number of laymen greatly appreciate the attempts now being made to translate technical language as nearly as possible into that of everyday usage.

IMPORTANT FOREST TREES

Of the 1,177 different trees that make up our forests, 182 are of special interest either because of the commercially useful timber or other products they supply, or because of their importance in forestry. In order that the reader may easily distinguish the names of such trees they have been marked with an asterisk (*).

Obviously, the number of important species can not remain constant, it being either increased or decreased from time to time in accordance with the development of commercial needs. Thirty years ago a list of the then important forest trees included about 100 different species. The discovery since then of new uses for wood and the extension of old uses to new and untried woods have greatly increased the number of native species that are now of special importance. Extending the usefulness of forest trees is a process that is ever going on, so that the list of trees now regarded as important must be considered largely as tentative.

It is only such trees as pines, spruces, firs, and cedars, which have the habit throughout their wide ranges of forming extensive pure stands, or those that form large proportions of mixed forests, such as oaks, chestnut, hickories, beech, maples, and ashes, that can remain fairly permanent members of a list of trees important in forestry. A good many of these, even after the natural supply has been greatly exhausted, as is the case with Eastern White Pine, are receiving, and will receive still more, such protection through Federal, State, and private conservation as will continue their important commercial existence.

A few species admitted to this list are important only in limited parts of their ranges, being insignificant in size and therefore of little or no commercial use over the remainder of their ranges. Notable among these are *Chamaecyparis lawsoniana*, *Chamaecyparis nootkatensis*, *Umbellularia californica*, *Taxus brevifolia*, etc.

An interesting phase of the extended and varied new uses of woods or other products of the trees, is the possible danger of early exhaustion of the natural supply now available of some of the rarer

and less abundant species. The rare and little-known Florida Yew (*Taxus floridana*) is an example. A professional maker of archers' high-grade bows, believing the wood of this yew to be of superior quality for his purposes, is said to be transferring his operations from California to Florida in order to exploit the very limited supply of this yew, available now only in a single county. Likewise, the rapidly increasing use for shuttles of the so-called Flowering Dogwood (*Cornus florida*), a small and hitherto unimportant tree, bids fair soon to exhaust the commercial supply of this wood. Another example of the near exhaustion of a species of limited range and abundance is the Cascara (*Rhamnus purshiana*) of northwestern range. Occurring mostly as single scattered individuals or in small groups, the total supply of trees that can yield bark (the only part of the tree used) is relatively small compared with the consumption. Every tree exploited for its bark is killed.

The present intensive exploitation of these smaller and temporarily useful species, with no means applied for maintaining a sustained yield, may so exhaust the species that the uses now made of them will cease unless shifted to still other, untried, species.

COMMON NAMES OF TREES

In order that the fullest possible consideration might be given to the important matter of selecting common names for the different trees enumerated in this new Check List of the Forest Trees of the United States, the Forester appointed a committee on common names. Membership of the committee was made up of Ward Shepard, Herbert A. Smith, and the writer, all members of the Forest Service. Latterly, upon the resignation of Doctor Smith from the committee, M. C. Merrill was chosen to fill the vacancy. In the prosecution of its work the committee received much helpful advice and many suggestions not only from other members of the Forest Service but also from other professional foresters throughout the United States.

It has long been the endeavor of the Forest Service to standardize the common names of trees, so that not only the trees as they are met with in forests and fields shall be known by generally accepted names, but that the commercial products of these trees—lumber, etc.—shall also be known by those names. The importance in trade relations of such standardization of common names can not be overestimated. Failure to use standard common names for important timber trees and their woods has led to troublesome and expensive litigation.

The standardization of the common names of trees has an even broader significance from the educational point of view. The one great object of all books on our trees is to acquaint the public with how many different trees we have and by what names they are known. Extending this common knowledge will be accomplished much more speedily if the present confusion of common names of trees can be ended by general agreement on standard names for the different species.

Many technical writers have a tendency largely to ignore common names, or, in some cases, to list the more common ones but not to single out any one name as desirable, preferring, as is perhaps natural, to rely upon technical names for distinguishing different trees. However, the use of standardized common names for trees is

quite as important to the layman as the correct technical name is to the professional botanist. It is inevitable that agreement should be more difficult to reach in the use of the common names of trees than of technical names, because there are national and international rules for the use of technical names, while for common names there are no codified rules, usage alone being the guide. Only in the case of trees that, happily, have acquired commonly accepted names, is the problem easily solved. A widely distributed tree may be and usually is known by from 10 to 25 or more different names in various parts of its range. It is then extremely difficult to determine what common name of that tree is most widely used, the most general use of a name being a satisfactory reason for selecting it. The greatest confusion of common names has occurred in the case of commercially important trees. Because of the large number of people concerned with the use of such trees and their products, there has been occasion for inventing, for trade and other purposes, many different names for the same tree, found in different States. In cases where such confusion was impossible to eliminate, the Committee on Common Names adopted names that appeared to be reasonable compromises, with the hope that in time they might be generally accepted. Because a large number of trees are unimportant and little known, they have no common names. For a good many of these suitable names have been coined from some easily observed characteristic of the trees, or from their peculiar range or habitat.

GROUP COMMON NAMES OF TREES

It so happens, as in the case of Post Oak (*Quercus stellata*), Live Oak (*Quercus virginiana*), Black Willow (*Salix nigra*), Basswood (*Tilia*), Paper Birch (*Betula papyrifera*), etc., that there are a number of closely related species and varieties of species which have not yet acquired distinctive common names and for which apparently it was impossible to coin suitable common names. Inability to do this is due to the fact that these closely related forms have no easily observed or striking characteristic on which to base distinctive common names. They are satisfactorily distinguished by characteristics readily seen by the trained botanist, but it is not to be expected that a lay student of trees would easily appreciate them. This considerable array of new and unknown varieties of different species groups is found to be bewildering to the ordinary student of trees if the varieties are designated by technical names only. He would, however, at once recognize a general or group resemblance in the texture and superficial appearance of the leaves, bark, and wood of such trees.

It therefore seemed to the Committee on Common Names that a satisfactory solution of this problem could be accomplished only by applying the same name to the members of each such group of species, or varieties of a species. For example, in the case of *Quercus stellata*, it seemed advisable to apply the name "Post Oak" to the 9 or 10 varieties of the species, most of which 25 or 30 years ago doubtless were not distinguished botanically, but known as Post Oak. From the present-day wood user's point of view they are still thought of as Post Oak. Botanically, these different forms are distinct from each other, but we can not demonstrate that there are corresponding differences in their woods. *Quercus virginiana* and its 7 or 8 varieties

is another group of oaks to which it was necessary to apply the group name "Live Oak."

Among the willows are groups of varieties for which there are no suitable common names other than those applied to the type species. *Salix longifolia* and *Salix nigra* with their several varieties have received, respectively, the group names "Sandbar Willow" and "Black Willow."

By far the most perplexing group of closely related species and their numerous varieties is the genus *Tilia*, the basswoods. Altogether there are over 25 different forms of them. A few species of this group are so well marked that they have acquired fairly distinctive common names. Suitable common names for the remainder of the group could not be found or coined from easily seen characteristics of the different forms. It therefore seemed necessary, for the present at least, to apply to all of these forms the general name "Basswood." It is safe to assume that few lay students of trees will fail to recognize this group as basswoods. Moreover, the woods of different species and varieties are so much alike in texture and other physical qualities as not to be easily distinguished. Certainly, wherever several different species or varieties of this group are cut for lumber the product is bound to be marketed simply as Basswood.

Likewise, the several varieties of *Betula papyrifera* were given the group name "Paper Birch," since from their general resemblance to the type species the lay student must for the present recognize them only as Paper Birch.

Although application of these group names enabled the Committee on Common Names satisfactorily to dispose of the question of common names for a number of different groups, the committee believes that as these various forms become better known some of them at least are likely to acquire acceptable distinctive common names.

MISAPPLIED COMMON NAMES

Not a few trees have received common names which are misapplied but which through long usage have become too thoroughly established to be discarded. A striking example of this misapplication of names is the use of the term "cedar" for species of *Juniperus*, *Thuja*, *Cupressus*, *Chamaecyparis*, and *Tumion*, groups of trees which botanically speaking are not cedars. The true cedars are species of *Cedrus*, of which we have no native representatives. Consistency, too, is often lacking in this improper practice. For example, *Juniperus virginiana* is practically always called "Red Cedar," but *Juniperus pachyphloea* is generally called "Alligator Juniper" instead of "Alligator Cedar." Lumber manufacturers have in the past applied the name "Oregon Pine" to a species of *Pseudotsuga*, not a pine, and the name "Larch" to a species of *Abies*. So, too, the name "Bald Cypress" applied to *Taxodium*, not a true cypress, is a misnomer. Many other examples of this misapplication of common names could be cited.

Lack of exact knowledge of the true botanical nature of these groups of trees on the part of those who faultily applied these names is the reason for this confusion. Whenever there has been a clear understanding of the true botanical nature of a group of trees there has not been improper naming. Accurate popular understanding of such well-known groups of trees as pines, oaks, beech, birches, poplars,

willows, and ashes has, on the whole, prevented the use of inapplicable generic common names.

With regard to imperfectly understood groups of trees, however, popular usage has given us many misapplied common names, to which special consideration was given by the committee. Popular usage is a powerful agency in establishing common plant names, regardless of whether the names so established are correctly applied. This influence of popular usage is so strong in some cases that it became a serious question as to how far the committee should go in trying to establish correct common names for those trees. Obviously, from the standpoint of consistent literary usage, there is no question of the desirability of such corrections, which would clear up much popular confusion.

When the first edition of the Check List of the Forest Trees of the United States was written, the author felt strongly that consistency should be observed in the use of common names, at least within certain groups of trees, notably pines, spruces, firs, larches, junipers, oaks, hickories, poplars, willows, etc. Accordingly, popular usage was ignored in the case of the genus *Juniperus*, and the common names of our native species were made to carry the term "*Juniper*." Thus, among other similar changes, the long-established name "Red Cedar" (*Juniperus virginiana*) became "Red Juniper." Twenty-five years' use of the Check List has shown that, incorrect and inconsistent though it is, the name "Red Cedar" is firmly established in popular usage. The authors of "Standardized Plant Names," a work recently published in the interest of standardizing the names of plants in commerce, recognizing the need of calling attention to the popular misapplication of certain plant names, have, without discarding such a name as "Red Cedar," reminded the reader that this is not a true cedar by writing it "Redcedar." Similarly, Bald Cypress (*Taxodium*), not a true cypress, is written "Common Baldcypress" and Incense Cedar (*Libocedrus*), not a true cedar, is written "California Incense-cedar." From an educational point of view, this is a clever and worthy effort to instruct the laity and still to preserve popular names.

The conclusion reached with regard to further use of misapplied but established common names of trees was that it is hopeless to attempt to change such names, but that the most widely used common name should be selected for each tree.

COMMON NAMES OF TREES AND TRADE NAMES OF THEIR WOODS

Although the Forest Service has made special effort to effect an agreement with lumber manufacturers and related interests on the common names adopted by the Service for forest trees and the names adopted by the trade for the lumber cut from those trees, complete agreement has not yet been reached. It is hoped, however, that still further effort finally will bring about agreement regarding the remaining trade names over which there is now some difference of opinion. The importance of complete accord among foresters and trade interests on the use of the names of different sorts of lumber is very great from the standpoint of the consumer. For example, the common name adopted by the Service for *Liquidambar styraciflua* is "Red Gum," which is applied both to the tree as it occurs in the forest and to its lumber on the market. The trade handles this

lumber under the names of "Red Gum," "Satin Walnut," "Hazelwood," etc. Unless the consumer is able accurately to distinguish the lumber of this gum from that of the true walnuts, hazelwood, etc., serious confusion is likely to arise. In the case of some of the timber species, of which large commercial supplies are available, such as the Northern White Pine, Western White Pine, Douglas Fir, and Longleaf Pine there would seem to be no good reason why the trees and their woods should not bear the same names.

Obviously, it is impracticable to apply the standard names of all timber trees to their wood products. There are many commercially important timber trees, the standard common names of which could not well be applied to the corresponding woods as now marketed. The best example of this class of trees is the White Oak. Because, botanically speaking, true White Oak is becoming more and more difficult to obtain in commercial quantities, the wood of other species of the white oak group is now being mingled with it and marketed as "White Oak" and the quality of the latter is not measureably, if at all in some cases, vitiated by the additions. There comes a time, therefore, in the commercial history of some of our timber species, when the tree and its wood can not continue to be known by the same common name. This seems especially true when the attempt is made to disguise a mixture of inferior woods under a name that originally was applied only to one sort of high-grade lumber. The consumer of lumber, not always able accurately to distinguish woods of similar appearance, has the right to purchase material that is either true to name, or, if necessity compels mixing several different species under one trade name, of a commonly acknowledged commercial quality.

On the whole, the tendency to misname commercially important forest trees or their woods for trade purposes is extremely unfortunate from an educational point of view. The sooner the public can be correctly informed as to the proper common names of trees, the fewer misunderstandings there will be in trade relations. There would seem to be other means of acquainting users with the useful qualities of little-known woods than by applying misleading names, which in time must be exposed.

SYNONYMOUS COMMON NAMES

A list is given of "Names in Use" after each species. When names are known to be used in certain States, the latter follow in parenthesis. Similarly, names used only in books or other literature are followed by the parenthetical expression "(lit.);" names used in the lumber trade likewise are followed by the parenthetical expression "(trade)." Names known to be applied only in general are listed without comment.

CHANGES IN TECHNICAL NAMES OF TREES

There still appears to be some disagreement among systematic botanists regarding rules of nomenclature. The establishment of an International Code in 1905, at the International Botanical Congress held in Vienna, Austria, apparently has not resulted in complete harmony, at least among American botanists, some of whom are following the International rules while some are being governed by the American Code. With one exception, the writer

has adhered to the latter code in dealing with the technical names of trees. The exception is the abandonment of duplicate binomials such as *Sassafras sassafras* not because they are untenable but because they represent a grotesque extreme. Practically all members of the Department of Agriculture using plant names are in accord with this departure.

Fortunately the two codes are substantially in agreement on several very important points. One of these points is maintaining the oldest specific name applied to a plant, regardless of whether it is found under the correct genus, thus eliminating the objectionable usage of adopting only the specific name first combined with the correct genus. Failure by some authorities to recognize the oldest specific name, even though found in an incorrect genus, has caused much confusion in the past, because such arbitrary practice may unjustly neglect maintaining the oldest specific name of a tree.

Another very important point of agreement is adherence now to the rule of not forming a binomial by raising the third term of a trinomial, the varietal name, to specific rank, even though the trinomial represents the oldest name applied to a plant. Thus, the oldest technical name of the Swamp White Oak is *Quercus prinus platanoides* La Marck (1783). Under an old rule, this trinomial was converted into *Quercus platanoides* (LaMarck) Sudworth, which, in strict compliance with the law of priority, represents the oldest name for this tree. But under the recent American and International rules it becomes necessary to discard this name for *Quercus bicolor* Willdenow (1801), the oldest published binomial applied to the Swamp White Oak.

Distressing changes in some of the technical names of our trees are made necessary by a careful study of the type specimens on which it was long supposed rested such familiar names as *Tilia americana* Linnaeus, and *Quercus prinus* Linnaeus. As a result of these studies, the above-mentioned names must now disappear or be shifted to other species long known by still other familiar names.

In previous years, the desire to restore the oldest tenable generic name applied to a group led to the unearthing of a few such genera and to the transference to them of species that were previously associated with genera of later date. The present American rule, however, of not recognizing a genus for which its author had failed to indicate a type species, has resulted in discarding a few of these oldest genera and in the return of later properly constituted genera. These changes have usually restored to use more familiar generic names. A case in point is that of the silverbell trees, long known as species of the genus *Halesia* Ellis, which was published in 1759. The discovery, however, some 15 years ago, that Patrick Browne described a Jamaican tree under the genus *Halesia* in 1756 seemed then to invalidate further use of *Halesia* for the silverbell trees. The genus *Mohrodendron* Britton was therefore created for these trees, and under it they were maintained until recently. The discovery that Patrick Browne did not indicate a type species for his genus *Halesia* invalidates its former standing and now permits the later *Halesia* of Ellis to be applied, as it was previously, to the silverbell trees.

TECHNICAL NAMES OF HYBRID TREES

For a great many years it has been customary to designate hybrid trees, which are supposed to be crosses between two related species, by a combination of the technical names of the supposed parents. Thus, a supposed hybrid between the White Oak and Post Oak was designated as *Quercus alba*×*Quercus stellata*. In many cases the parentage of the hybrid is clearly evident; but in not a few cases it is difficult to determine the parentage, so that all authorities are not agreed on this point. The difficulty in determining the parentage of hybrids has resulted in the creation by different authors of a number of these cumbersome names for the same hybrid.

The plan set forth in Trelease's recent paper on "Naming American Hybrid Oaks" happily proposes to do away with this old method of designation, by applying simply binomials, the multiplication sign (×) being prefixed in order to distinguish hybrid names from other binomials. This procedure has given to our hybrid oaks names that will remain fixed, no matter how much conflicting opinion arises regarding their parentage.

In past years a few of our hybrid oaks were described under binomial names, of which *Quercus morehus* Kellogg and *Quercus heterophylla* Michaux are examples. It is probably true, however, that the authors of these names did not know they were applying them to hybrid forms. The uniform use of binomial nomenclature for all hybrids was not generally accepted before Trelease applied it to our hybrid oaks. The writer has gladly adopted this new procedure for all hybrids enumerated in the Check List.

CAPITALIZATION OF SPECIFIC AND VARIETAL NAMES

It has been thought best in accepted technical names to follow the rule of decapitalizing all specific and varietal names, including those derived from geographic names and the surnames of distinguished or other individuals. This rule was first adopted by the writer in Nomenclature of the Arborescent Flora of the United States (1897) from the Code of the American Ornitholigists' Union. With some exceptions, zoölogists in general adhere to the same practice. The present usage of botanists, however, is not uniform. Some capitalize all specific names derived from geographic and personal names, while others decapitalize those from geographic names and capitalize specific and varietal names derived from the names of persons. A consistent rule based on literary practice would seem to require that all specific and varietal names derived from geographic and personal names be capitalized. The decapitalization of all such names, however, is adhered to by the writer in the interest of uniformity of appearance in a catalogue of names. It is believed that this plan is not likely to confuse the reader regarding the origin of names, the source usually being apparent in the name itself. Thus, written in the form adopted here, the origin of *Pinus coulteri*, *Juniperus utahensis*, *Picea breweriana*, *Crataegus champlainensis*, *Crataegus ellwangeriana*, etc., would seem to be perfectly clear.

It must be noted that the rule of decapitalizing specific and varietal terms of accepted technical names is not applied in the case of technical names cited in various connections. The rule followed for such names is to preserve the capitalization used by the original author.

NATURALIZED TREES

It has become necessary from time to time to add to our indigenous arborescent flora foreign trees that have escaped from cultivation and established themselves without the aid of man. Such newcomers are termed "naturalized." A number of them are very aggressive and persistent growers. Notably so are the Ailanthus, Paper Mulberry, White Mulberry, Pear, Apple, Peach, Cherry, European White Poplar, and others, some of which are veritable nuisances. Many such adventive trees have found suitable soil and climatic conditions within our borders and are abundantly able to take care of themselves in competition with native trees. Later observations may show that some of these exotics, now believed to be naturalized, are unable permanently to maintain themselves here.

A few authorities are somewhat reluctant to admit as members of our tree flora all veritably naturalized exotics; particularly is this true of exotics that have found apparently permanent lodgment in tropical portions of the United States. For the purpose especially of acquainting students with the existence of all of the trees to be met with in the wild state, the writer has, with few exceptions, included all exotics that reliable evidence shows to be naturalized here. It would seem that this rather extensive admission of foreign species does not in any way detract from the importance or standing of our native trees. As here catalogued no confusion of foreign and native trees can arise, because the adventive nature of foreign trees is uniformly noted in their "Range."

DEFINITION OF A TREE

It is difficult satisfactorily to draw the line between a tree and a shrub. Difference of opinion regarding this mooted question has, as the case may be, increased or decreased the number of recorded arborescent species and varieties. Judgment as to when a plant is to be called a tree and when a shrub appears to be based chiefly on the size, height, and diameter attained. Of course, differences of judgment are likely to arise only with regard to woody plants that are close to the imaginary line drawn between trees and shrubs. In order to have a workable definition of a tree it has been necessary arbitrarily to assume a minimum height, diameter, and form of development, outside of which a woody plant can not be considered arborescent. The general rule applied by the author in defining a tree includes woody plants having one well-defined stem and a more or less definitely formed crown, and attaining a height of at least 8 feet and a diameter of not less than 2 inches. Most truly arborescent plants produce a single erect or ascending trunk. Some species of trees, however, have the habit of producing several trunks from the same root. Examples of this type of growth are to be found among the willows, some of which, on account of their large size, obviously are properly classed as trees.

The fact that some species admitted as arborescent are generally shrubby in size has not seemed to the writer a sufficient reason for excluding them from our tree flora, for they occasionally become trees in some part of their range, even though it be outside our border. A notable example of this type in many respects is the so-called Dwarf Juniper (*Juniperus communis* Linnaeus), which is world-wide

in its distribution, but known to be arborescent in North America only in a few counties of southern Illinois. Another example is that of the Buttonbush (*Cephalanthus occidentalis* Linnaeus), which was long known only as a thicket-forming shrub, but which comparatively recently was found to become a small tree in southern Michigan, southern Arkansas, eastern Texas, and at a few stations in California. Still another example is the California Redbud (*Cercis occidentalis* Torrey). It is commonly a low-spreading shrub. Occasionally, however, examples have been found 12 or 15 feet high and 4 or 5 inches in diameter, and recently J. D. Coffman, of the Forest Service, found a tree of this species in California 13½ inches in diameter and 25 feet high. All such potentially arborescent species have been freely admitted to our tree flora.

RANGE OF NEWLY-DESCRIBED AND LITTLE-KNOWN TREES

Because a considerable number of the trees now listed are newly described species or varieties, there is but little information of record regarding their ranges and much of what is known represents records only of localities from which specimens have been collected. It is to be expected that later field studies will unite the scattered stations now known into consistently connected ranges. But it is only through the assistance of many observers that this desirable information can be obtained.

NATURE OF THIS WORK

In preparing this revision of the Check List the author can claim little originality. Such a work represents rather the bringing together in catalogue form for convenient reference what collectively a large number of different writers and observers have made available. He has, of course, used his own judgment in accepting the opinions of others regarding the standing of the many species and varieties that have been published. In matters of this sort complete agreement is perhaps impossible, since the knowledge and the point of view of every one who writes about trees are necessarily different. Perhaps, however, agreement as to whether a tree should be rated as a species or as a variety is unimportant, the more essential point being that the plant be named and clearly distinguished, either as a variety or species. Singularly enough, authors sometimes fail to agree with themselves for long, obviously because increased knowledge of a tree, already named, may necessitate a change of judgment from a previous decision regarding its rank.

ACKNOWLEDGMENTS

In collecting the information used in this revision, the author has found it very difficult to acknowledge all of the many sources from which it has been drawn. So far as possible, however, credit has been given in the proper place.

In this connection the writer desires to express his grateful appreciation for the cordial and helpful cooperation received from members of the Forest Service who have contributed much valuable information regarding the exact range of forest trees observed within the national forests. Particular reference is made here of notes compiled by H. G. Calkins on the range of trees in the Coronado National Forest, Arizona, and placed at the author's disposal through

the courtesy of the district forester, F. C. W. Pooler. Even at this late date, the author desires to acknowledge publicly the receipt of valuable information on the range of Missouri trees constributed by B. F. Bush, of Courtney, Mo., in a letter dated January 4, 1899. Mr. Bush's notes, here incorporated, were made one year following the publication (1898) of the first edition of the Check List, which he took the trouble to go over. Likewise, the writer desires to express his hearty appreciation of a list of previously unpublished common names of trees sent him by John Foley, formerly a member of the Forest Service and now forester of the Pennsylvania Railroad.

The author's thanks are also due William Trelease, who supplied helpful information regarding hybrid oaks, and C. S. Sargent, who has given valuable aid at various times. Appreciation is here expressed to Ellsworth Bethel, Leslie M. Gooding, and S. N. Wycoff for notes on the range of *Pinus flexilis* in southwestern Nebraska.

Reference is made elsewhere in this introduction to "Standardized Plant Names," a work recently published in the interest of uniformity in the use of names applied to plants in American commerce. In so far as this catalogue deals with the common names of our native and naturalized trees, it has been most useful to the Forest Service Committee on Common Names of Trees in its endeavor to standardize the names of forest trees. The author's thanks are here expressed particularly to F. V. Coville, a member of the subcommittee which prepared "Standardized Plant Names," for his careful review of the common names used in the Check List.

Acknowledgment is also made to John K. Small, of the New York Botanic Garden, for the help he has given in deciding on the addition to our tree flora of naturalized and new and little-known Florida trees, as well as for supplying information on their range. To Roland M. Harper the author expresses his hearty appreciation of much helpful information given on the distribution of trees in the Southern States.

Finally the author desires to give credit to Margaret E. Baker for the laborious and painstaking work she has done in preparing the index.

GEORGE B. SUDWORTH

CHECK LIST OF THE FOREST TREES OF THE UNITED STATES

GYMNOSPERMAE

Family PINACEÆ

PINUS Duhamel

***Pinus strobus** Linnæus. **Northern White Pine.**

RANGE.—From Newfoundland (White Bay region) and along the northern shores of St. Lawrence Gulf to northern Ontario (near Abittibi and Nipigon Lakes) and southern Manitoba (near southern end of Lake Winnipeg); also in central Manitoba north of Lake Winnipeg at points northeast and northwest of Lake Sipiwesk; southward through northern and eastern Minnesota, central and southeastern Iowa, northern (counties) Illinois, southern shores of Lake Michigan, southern Michigan (north of Allegan, Eaton, and St. Clair Counties. Once dominant as far south on the west as north border of Van Buren County), northeastern and eastern (border counties) Ohio, and along the Allegheny Mountains to northern Georgia (Tallulah Falls).

NAMES IN USE

White Pine (Me., N. H., Vt., Mass., R. I., Conn., N. Y., N. J., Pa., Del., Va., W. Va., N. C., Ga., Ind., Ill., Wis., Mich., Minn., Ohio, Ontario, Nebr.).
Cork Pine (Mich.).
Weymouth Pine (Mass., S. C.).
Soft Pine (Pa.).
Northern Pine (S. C. and trade).
Spruce Pine (Tenn.).
Balsam Pine (N. C.).
Apple Pine.
Sapling Pine.
Pumpkin Pine (Mich. and trade).
Canadian White Pine (trade).
Soft White Pine (trade).
Northern White Pine (trade).
Wisconsin White Pine (trade).
Soft Cork White Pine (trade).
Minnesota White Pine (trade).
Soft Minnesota White Pine (trade).
Eastern White Pine (trade).

VARIETIES DISTINGUISHED IN CULTIVATION

Pinus strobus brevifolia Loudon.
Pinus strobus umbraculifera Knight.
Pinus strobus minima Beissner.
Pinus strobus fastigiata (Koch) Beissner.
Pinus strobus viridis Carrière.
Pinus strobus gracilifolia Sudworth.
Pinus strobus nivea (Knight) Carrière.
Pinus strobus aurea Carrière.
Pinus strobus variegata Carrière.
Pinus strobus zebrina Beissner.
Pinus strobus prostrata hort. Kew.
Pinus strobus unifolia [1] Sudworth.

***Pinus monticola** D. Don. **Western White Pine.**

RANGE.—From Vancouver Island and southern British Columbia (coast and gold ranges) through northern Idaho (Coeur d'Alene and Bitter Root Mountains) to northern Montana (Flathead River) and southward through Washington and Oregon (Cascade Mountains) to California (on Sierra Nevada to Tulare County between the Big and Little Kern Rivers).

NAMES IN USE

White Pine (Calif., Nev., Oreg.).
Fingercone Pine (Calif.).
Mountain Pine (Calif.).
Soft Pine (Calif.).
Little Sugar Pine (Calif.).
Mountain Weymouth Pine.
Western White Pine.
Norway Western White Pine (trade).
Soft Idaho White Pine (trade).
Idaho White Pine (trade).

[1] *Pinus strobus unifolia* Sudworth=*Pinus strobus forma nova monophylla* Tubeuf, in Forstl.—naturw. Zeitschr., VII, 34, (t.) 35, 1898, not *P. monophylla* Torrey & Fremont, 1845. A form detected in Germany and characterized by Dr. Tubeuf as having the needles more or less cohering throughout their length and forming a single needle

*Pinus lambertiana Douglas. — Sugar Pine.

RANGE.—Coast region from Oregon (North Fork Santiam River) to California (Sierra Nevada and coast ranges to Santa Lucia Mountains; San Bernardino and Cuyamaca Mountains); Lower California (San Pedro Martir Mountains).

NAMES IN USE

Sugar Pine (Calif., Oreg.).
Big Pine.
Shade Pine (Calif.).
Great Sugar Pine.
Little Sugar Pine.
Gigantic Pine (Calif. lit.).
Purple-coned Sugar Pine (Calif. lit.).
California Sugar Pine (trade).

*Pinus flexilis James. — Limber Pine.

RANGE.—Rocky Mountain Region from Alberta and Montana to western Texas (Guadaloupe and Limpia Mountains) and New Mexico; westward in mountains of northern Arizona, Utah, Nevada, and California (Inyo Mountains and Mount Sillman; west side of Sierras on headwaters of Kings River, San Bernardino Mountains in Snow Canyon); also in southwestern Nebraska (Kimball County); South Dakota (Harney Peak—boundary line between Pennington and Custer Counties. Fide Prof. A. O. Garrett.)

NAMES IN USE

White Pine (Calif., Nev., Utah, Colo., N. Mex.).
Pine (Utah, Mont.).
Bull Pine (Colo.).
Rocky Mountain White Pine (Calif.).
Rocky Mountain Pine.
Limber-twig Pine (Calif. lit.).
Western White Pine (Calif. lit.).
Arizona Flexilis Pine.
Jack Pine (Colo.).
Limber Pine.

Pinus albicaulis Engelmann. — Whitebark Pine.

RANGE.—From British Columbia (coast ranges, Lltasyouco River, and Whitesail Lake) southward and through Washington and Oregon (Olympic, Cascades, and on Blue Mountains); eastward through northern Washington to northern Montana (eastern slope Rocky Mountains) and southward to Wyoming (Wind River and Salt River Ranges); California (in Sierra Nevada from Mount Shasta to Mount Whitney and Scott Mountains); Nevada (southern Washoe County, on Mount Rose and Mount Davidson).

NAMES IN USE

White-stem Pine (Calif., Mont.).
Scrub Pine (Mont.).
Pitch Pine (Mont.).
White-bark (Oreg.).
White-bark Pine (Calif.).
Creeping Pine (Calif. lit.).
Alpine White-bark Pine (Calif. lit.).
White Pine (Idaho and Calif.).

*Pinus strobiformis Engelmann. — Mexican White Pine.

RANGE.—Southwestern New Mexico (mountains) to Arizona (Santa Rita, Santa Catalina, Rincon, Chiricahua, Huachuca, and Animas Mountains); mountains of Mexico and Guatemala; western Texas (Guadaloupe Mountains).

NAMES IN USE

Ayacahuite Pine.
White Pine (Ariz., N. Mex., Mex.).
Mexican White Pine.
Arizona White Pine.
Sugar Pine (N. Mex.).
Mexican Pine (Ariz.).

Pinus parryana Engelmann. — Parry Piñon.

RANGE.—Southern California (San Diego County and Santa Rosa and San Jacinto Mountains, Riverside County); southward into Lower California (San Pedro Martir Mountains).

NOTE ON NOMENCLATURE.—Formerly designated as *Pinus quadrifolia Parlatore*, and more recently as *Pinus cembroides* var. *parryana* Voss.

NAMES IN USE

Nut Pine (Calif.).
Parry's Pine (Calif.).
Parry's Nut Pine (Calif.).
Parry Nut Pine (Calif. lit.).
Piñon (Calif.).
Mexican Piñon (Calif. lit.).
Four-leaf Pine (lit.).
Parry Piñon.

Pinus cembroides Zuccarini. Mexican Piñon.

RANGE.—Arizona (central and southern mountain ranges, including in the latter region the ten divisions of the Coronado National Forest); western Texas (Chisos, Sierra Diablo, and Guadaloupe Mountains; reported also in Kerr and Edwards Counties); northern Mexico and Lower California.

NAMES IN USE

Nut Pine (Ariz., N. Mex.).
Piñon (Ariz., Mex.).
Stone-seed Mexican Piñon (lit.).
Mexican Cembra-like Pine (lit.).
Mexican Piñon.
Mexican Stone Pine (lit.).

*Pinus edulis Engelmann. Piñon.

RANGE.—From Colorado (eastern base of Pikes Peak in the vicinity of Manitou; also a large isolated area in north-central part of the State—Larimer County, along the Dakota Hogback, 25 miles northwest of Fort Collins), southward to western Texas (mountains) and western Oklahoma; westward (probably in southwestern Wyoming) to eastern Utah, and through New Mexico to northern, central, and southeastern Arizona (northern Chiricahua Mountains); mountains of Northern Mexico; Lower California (San Pedro Martir Mountains).

NOTE ON NOMENCLATURE.—Designated by some authors as *Pinus cembroides* var. *edulis* Voss.

NAMES IN USE

Piñon (Tex., Colo.).
Nut Pine (Tex., Colo.).
Piñon Pine (Colo.).
New Mexican Piñon (lit.).
Scrub Pine (Colo.).
Pitch Pine (Utah).

*Pinus monophylla Torrey and Fremont. Singleleaf Piñon.

RANGE.—From Utah (near Utah Lake and western side of Wasatch Mountains) to California (eastern foothills of southern Sierra Nevada, extending to the west slope at the heads of Kings and Kern Rivers; also in San Bernardino and San Jacinto Mountains) and southward into northern Arizona (San Francisco Mountains); Lower California.

NOTE ON NOMENCLATURE.—Designated by some authors as *Pinus cembroides* var. *monophylla* Voss.

NAMES IN USE

Piñon (Calif., Ariz., Nev., Utah).
Nut Pine (Calif., Ariz., Nev., Utah).
Gray Pine (Nev.).
Nevada Nut Pine (Calif.).
Single-leaf (Calif. lit.).
Fremont's Nut Pine (Calif. lit.).
Single-leaf Piñon.
Single-leaf Pine (lit.).

*Pinus balfouriana Murray. Foxtail Pine.

RANGE.—California (Scott Mountain in Siskiyou County; Mount Whitney and sources of Kings and Kern Rivers; Coast range—on Mount Yolo Bally; headwaters of Sacramento River).

NAMES IN USE

Spruce Pine (Calif. lit.).
Foxtail Pine (Calif.).
Balfour's Pine (Calif.)

*Pinus aristata Engelmann. Bristlecone Pine.

RANGE.—From Colorado (James Peak, 40 miles northwest of Denver) and northeastern New Mexico (Rio Puerco watershed; sec 1, T. 17 N., R. 12 E. N. M. P. M.; Bartlett Ranch) and westward (Carson National Forest—Rio Pueblo watershed), through southern Utah, northern Arizona (San Francisco Mountains—peaks), and Nevada to southeastern California.

NAMES IN USE

Hickory Pine (Calif. lit.).
Bristle-cone Pine (Calif. lit.).
Foxtail Pine (Calif. lit.; Nev.).
Wind Pine (Utah).
Fox-tail.
Jack Pine (Colo.).

*Pinus resinosa Solander. Norway Pine.

RANGE.—Fro n Nova Scotia to northern Ontario (north of Abittibi Lake) to southern Manitoba (Elk Island, north latitude 51° near southern end of Lake Winnipeg); southward through the Northern States to Massachusetts (Middlesex County), Pennsylvania Chester County), West Virginia (on North Fork Mountain, Pendleton County), central Michigan (Saginaw), northern Wisconsin (Oskosh and Eau Claire); southern Wisconsin (Kilbourn, Sauk County); and northeastern Minnesota.

NAMES IN USE

Red Pine (Vt., N. H., N. Y., Wis., Minn., Ontario, trade and hort.).
Norway Pine (Me., N. H., Vt., Mass., N. Y., Wis., Mich., Minn., Ontario, hort. and trade).
Pig Iron Pine (Minn).
Hard Pine (Wis., Me., trade).
Canadian Red Pine (Eng.).
Norway (trade).
Pitch Pine (Can.)
Northern Pine (trade).
Quebec Pine (Eng. trade).
Yellow Deal (Eng. trade).
Canadian Pine (Eng. trade).
Pig-iron Norway (Me., Minn.).
Red Deal (Eng. trade).
Shellbark Norway (Minn.).

Pinus torreyana Carrière. Torrey Pine.

RANGE.—Southern California (coast near Soledad River in San Diego County); also on Santa Rosa Island.

NAMES IN USE

Soledad Pine (Calif.).
Del Mar Pine (Calif.).
Lone Pine (Calif).
Torrey Pine (Calif. lit.).
Torrey's Pine.

*Pinus arizonica Engelmann. Arizona Pine.

RANGE.—Southern Arizona (Chiricahua, Huachuca, Animas, Santa Catalina, El Rincon, and Santa Rita Mountains); New Mexico (Gila National Forest); Mexico (Sonora, Chihuahua).

NOTE ON NOMENCLATURE.—Designated by some authors as *Pinus ponderosa* var. *arizonica* Shaw.

NAMES IN USE

Arizona Yellow Pine.
Arizona Pine.
Arizona Five-leaved Lumber Pine (Calif. lit.).

*Pinus ponderosa Lawson. Western Yellow Pine.

RANGE.—From British Columbia (interior south of latitude 51°), and Dakota (Black Hills region) southward in the Pacific and Rocky Mountain region to western Texas, northwestern Nebraska, and Mexico.—Reported from Vancouver Island (Renfrew and Alert Bay district.—Fide Leo M. Martin of the Crown Willamette Paper Co., per George H. Cecil in letter August 10, 1918).

NOTE ON NOMENCLATURE.—Includes the Rocky Mountain form of this species which was formerly, and is still, designated as *Pinus ponderosa scopulorum* Engelmann and as *Pinus scopulorum* (Engelmann) Lemmon.

NAMES IN USE

Western Yellow Pine.
Pondosa Pine (trade).
California White Pine (trade).
Arizona White Pine (trade).
Yellow Pine (Calif., Colo., Mont., Idaho, Utah, Wash., Oreg., Nebr.).
Bull Pine (Calif., Wash., Utah, Idaho, Oreg., Colo.).
Big Pine (Mont.).
Long-leaved Pine (Utah, Nev., Colo.).
Red Pine.
Pitch Pine.
Heavy-wooded Pine (Eng.).
Western Pitch Pine.
Heavy Pine (Calif.).
Foothills Yellow Pine.
Sierra Brownbark Pine (lit.).
Montana Black Pine (Calif. lit.).
"Gambier Parry's Pine" (Eng. lit.).
Rocky Mountain Yellow Pine (lit.).
Mexican Pine (N. Mex.).
Western Soft Pine (trade).
Western White Pine (trade).
Oregon White Pine (trade).
Oregon Pine (trade).
Western Pine (trade).
Arizona Soft Pine (trade).
Ponderosa Pine (nursery trade).

VARIETY DISTINGUISHED IN CULTIVATION

Pinus ponderosa penduliformis Sudworth. **Weeping Western Yellow Pine.**

*Pinus apacheca Lemmon. Apache Pine.

RANGE.—Southern Arizona (Chiricahua, Huachuca, Dragoon, Animas, and Santa Rita Mountains; probably also in the Rincon Mountains) and southwestern and north-central (Carson National Forest) New Mexico.

NOTE ON NOMENCLATURE.—Formerly designated as *Pinus latifolia* Sargent, not of authors, and as *Pinus mayriana* Sudworth.[2]

NAMES IN USE

Broad-leaf Pine (lit.).
Apache Pine.
Arizona Broad-leaf Pine (lit.).
Mayr Pine (lit.).
Arizona Long-leaf Pine (Ariz.).

*Pinus jeffreyi "Oreg. Com." Jeffrey Pine.

RANGE.—California (Scott Mountains in Siskiyou County and along Sierra Nevada to San Bernardino and San Jacinto and Cuyamaca Mountains); southern Oregon (Douglas County, 30 miles south of Roseburg); also in Lower California (Mount San Pedro Martir).

NOTE ON NOMENCLATURE.—Designated by some authors as *Pinus ponderosa* var. *Jeffreyi* Vasey.

NAMES IN USE

Bull Pine (Calif.).
Black Pine (Calif.).
Western Black Pine (Calif. lit.).
Pinos (Calif.).
Truckee Pine (Nev.).
Sapwood Pine (Calif.).
Jeffrey Pine (Calif. lit.).
Blackbark Pine (Calif. lit.).
Redbark Pine (Calif. lit.).
Peninsula Pine (Calif. lit.).
Sierra Redbark Pine (Calif. lit.).
Peninsula Black Pine (Calif. lit.).

Pinus leiophylla Schlechtendal & Chamisso. Chihuahua Pine.

RANGE.—Southwestern New Mexico and Arizona (southern mountain ranges, including the ten districts of the Coronado National Forest; San Francisco Mountains; Sitgreaves National Forest, 7 miles west of Pinedale, Navajo County); and southward in Mexico.

NOTE ON NOMENCLATURE.—Formerly designated as *Pinus chihuahuana* Engelmann.

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[2] See U. S. Dept. Agr. Bull. No. 460, 33, 1917.

NAMES IN USE

Chihuahua Top-cone Pine (Calif. lit.).
Chihuahua Pine (lit.).
Yellow Pine (Ariz.).

*Pinus contorta Loudon.[3] — Lodgepole Pine.

RANGE.—From Alaska (Yukon River) and southward in the coast region to California (Mendocino County) and through interior British Columbia; the mountains of Washington and Oregon to California (Sierra Nevada to San Jacinto Mountains); plateau east of the Rocky Mountains (latitude 56°) and South through the Rocky Mountain region to New Mexico and northern Arizona.

NOTE ON NOMENCLATURE.—The Rocky Mountain form of this tree was formerly, and is still, designated as *Pinus Murrayana* Balfour, and as *Pinus contorta* var. *Murrayana*, Engelmann, and as *Pinus contorta* var. *latifolia*, S. Watson, the Pacific coast form being restricted to *Pinus contorta* Loudon.

NAMES IN USE

Scrub Pine.
Knotty Pine.
Sand Pine (Oreg.).
North Coast Scrub Pine (Calif. lit.).
Bolander's Pine.
Henderson's Pine.
Tamarack (Wyo., Utah, Mont., Calif., and trade).
Prickly Pine (Utah).
White Pine (Mont., Colo.).
Black Pine (Wyo. Mont.).
Lodgepole Pine (Wyo., Wash., Mont., Idaho, Colo.).
Spruce Pine (Colo., Idaho, Mont.).
Tamarack Pine (Calif., Wash.).
Murray Pine (Calif. lit.).
Jack Pine (Colo.).
Bird's-eye Pine (Wyo.).
Shore Pine (lit.).

*Pinus sabiniana Douglas. — Digger Pine.

RANGE.—California (Shasta County and southward in foothills of coast ranges and on western slopes of Sierra Nevada).

NAMES IN USE

Sabine's Pine (Calif. lit.).
Gray-leaf Pine (Calif.).
Digger Pine (Calif.).
Bull Pine (lit.).
Squaw Pine (Calif.).
Blue Pine (Calif.).
Wythe Pine (lit.).
Gray Pine (lit.).
Nut Pine (Calif.).
Round-top Nut Pine (Calif.).
Silver Pine (Calif.).

Pinus coulteri D. Don. — Coulter Pine.

RANGE.—California (from Monte Diablo to Cuyamaca Mountains); southward in Lower California (Sierra del Pinal).

NAMES IN USE

Coulter's Pine (Calif.).
Nut Pine (Calif.).
Bigcone Pine (Calif.).
Large-coned Pine (Eng. lit.).
Bull Pine (Calif.).
Pitch Pine (lit.).

Pinus radiata D. Don. — Monterey Pine.

RANGE.—California (Point Pinos on Monterey Bay, and along the coast from Pescadero to San Simeon Bay; San Luis Obispo County—vicinity of Cambria); Santa Rosa, Santa Cruz Islands; Lower California (Guadaloupe Island).

NOTE ON NOMENCLATURE.—Formerly designated as *Pinus insignis* Douglas.

[3] See Forest Trees of the Pacific Slope (U. S. Forest Service), 49, 1908.

NAMES IN USE

Monterey Pine (Calif.).
Spreading-cone Pine (Calif. lit.).
Nearly Smooth-cone Pine (Calif. lit.).
Remarkable Pine (Calif. lit.).
Small-coned Monterey Pine (Calif. lit.).
Two-leaved Insular Pine.[4]

*Pinus attenuata Lemmon. Knob-cone Pine.

RANGE.—Oregon (McKenzie River and on Emigrant Creek—in Cascade National Forest—fide John D. Guthrie, and south on western slopes of Cascades) to California (Sierra Nevada to Mariposa County; in the northern cross ranges and southern coast ranges from Santa Cruz to San Bernardino Mountains).

NOTE ON NOMENCLATURE.—Formerly designated as *Pinus tuberculata* Gordon.

NAMES IN USE

Knob-cone Pine (Oreg., Calif.).
Prickly-cone Pine (Idaho).
Sun-loving Pine (Calif. lit.).
Sunny-slope Pine (Calif. lit.).
Narrow-cone Pine (Calif. lit.).
Tuberculated-cone Pine (Eng. lit.).
Scrub Pine (Calif.).

*Pinus taeda Linnaeus. Loblolly Pine.

RANGE.—South Atlantic and Gulf States from New Jersey (Cape May), southern Delaware, eastern Maryland, and North Carolina (Polk County) to central Florida (Cape Malabar and Tampa Bay); west to eastern Texas (Colorado River; in Bastrop County); northward into southwestern Oklahoma, southwestern Arkansas, and the southern border of middle and west Tennessee.

NAMES IN USE

Loblolly Pine (Del., Va., N. C., S. C., Ga., Ala., Fla., Miss., La., Tex., Ark.).
Oldfield Pine (Del., Va., N. C., S. C., Ga., Ala., Fla., Miss., La., Tex., Ark.).
Torch Pine (Eng. lit.).
Rosemary Pine (Va., N. C., in part).
Slash Pine (Va., N. C., in part).
Longschat Pine (Del.).
Longshucks (Md., Va.).
Black Slash Pine (S. C.).
Frankincense Pine (lit.).
Shortleaf Pine (Va., N. C., S. C., La.).
Bull Pine (Texas and Gulf region, Md., Ark.).
Virginia Pine (trade).
Sap Pine (Va., N. C.).
Virginia Sap Pine (eastern trade).
Meadow Pine (Fla.).
Cornstalk Pine (Va.).
Black Pine (Va., N. C., Ga.).
Foxtail Pine (Va., Md.).
Indian Pine (Va., N. C.).
Spruce Pine (Va. in part).
Bastard Pine (Va., N. C.).
Yellow Pine (north Ala., N. C., Ark.)
Buckskin Pine (La., Miss.).
Shortstraw Pine.
Swamp Pine (Va., N. C.).
Longstraw Pine (Va., N. C., in part)
North Carolina Pine (trade).
Heart Pine (N. C.).
Lobby Pine (Ga.).
Longleaf Pine (Del., Md., Va., N. C.)
Maiden Pine (N. C.).
Prop Pine (Md., Va.).
Bog Pine (N. C.).

*Pinus rigida Miller. Pitch Pine.

RANGE.—From Maine (Mount Desert Island) to eastern Ontario (north shore of Lake Ontario and Lower Ottawa River) and southward in the Atlantic region to southern Virginia (Norfolk) and along the mountains to northern Georgia (Atlanta); west to western New York (Ithaca), northeastern and northwestern (Beaver to Warren Counties) Pennsylvania, eastern Ohio (to Jackson and Lawrence Counties), Kentucky, and eastern Tennessee.

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[4] Refers to the two-leaved form, *Pinus radiata binnata* (Engelmann) Lemmon, found on Santa Rosa, Santa Cruz, and Guadaloupe Islands.

NAMES IN USE

Pitch Pine (Vt., N. H., Mass., R. I., Conn., N. Y., N. J., Pa., Del., W. Va., N. C., S. C., Ga., Ohio, Ontario, Md., England).
Long-leafed Pine (Del.).
Longschat Pine (Del.).
Hard Pine (Mass.).
Yellow Pine (Pa., Ga.).
Black Pine (N. C.).
Black Norway Pine (N. Y.).
Red Pine (N. Y.).
Rigid Pine (Eng. lit.).
Sap Pine (lit.).
Pennsylvania Yellow Pine (Pa.).
Shortleaf Pine (Ga.).
Ridge Pine (N. C.).
Mountain Pine (N. C.).

*Pinus rigida serotina (Michaux) Loudon. **Pond Pine.**

RANGE.—Coast region from New Jersey (vicinity of Cape May) and southeastern Virginia to Florida (head of St. Johns River, and probably farther south; on the west coast of Florida from Pensacola to Osceola County and probably much farther south). Range imperfectly known.

NOTE ON NOMENCLATURE.—Formerly designated as *Pinus serotina* Michaux.

NAMES IN USE

Marsh Pine (N. C.).
Meadow Pine (N. C.).
Pond Pine (N. C., S. C., Fla., Miss., La.).
Loblolly Pine (N. C., Fla.).
Spruce Pine (S. C., Ga.).
Bastard Pine (S. C., Ga.).
Bull Pine (S. C., Ga.).
Pocoson Pine.
Bay Pine (N. C.).
Black-bark Pine (N. C.).
Black Pine (N. C.)

*Pinus virginiana Miller. **Virginia Pine.**

RANGE.—From New Jersey (central and southern) and Pennsylvania (central, southern, and western) to Georgia and northern Alabama (Winston, Cullman, and Dekalb Counties); west into Ohio, southern Indiana, Mississippi (northeastern), and middle Tennessee (Putnam County); Arkansas (Carroll County, on Ozark Mountains).

NOTE ON NOMENCLATURE.—Formerly designated as *Pinus inops* Solander.

NAMES IN USE

Jersey Pine (N. J., Pa., Del., N. C., S. C.).
Scrub Pine (R. I., N. Y., Pa., Del., N. C., S. C., Ohio).
Short Shucks (Md., Va.).
Shortshat Pine (Del.).
Spruce Pine (N. J., Md., Va., N. C., S. C., Tenn., Ala.).
Shortleaved (N. C.).
Cedar Pine (N. C.).
River Pine (N. C.).
Nigger Pine (Tenn., Ga.).
New Jersey Pine (lit.).
Poverty Pine.
Black Pine (Ga.).
Alligator Pine (N. C.).
Hickory Pine (N. C.).
North Carolina Pine (N. C.).
Virginia Pine (Md., Va., N. C.).
Spruce (Ga.).

*Pinus clausa (Engelmann) Sargent. **Sand Pine.**

RANGE.—Coast of Alabama (Baldwin County) and western Florida (to Peace River); east coast of Florida (from St. Augustine to New River).

NAMES IN USE

Sand Pine (Fla., Ala.).
Oldfield Pine (Fla.).
Florida Spruce Pine (Ala.).
Scrub Pine (Fla.).
Spruce Pine (Fla.).
Upland Spruce Pine (Fla.).

*Pinus pungens Lambert. **Mountain Pine.**

RANGE.—Southern Pennsylvania (in the Allegheny Mountain region) to North Carolina, eastern and middle Tennessee and Georgia (Tallulah Falls).

NAMES IN USE

Table Mountain Pine (Pa., Del., Md., S. C.).
Southern Mountain Pine (Tenn.).
Prickly Pine (N. C.)
Black Pine (N. C.).
Ridge Pine (N. C.).
Yellow Pine (N. C.).
Hickory Pine (Pa.).
Mountain Pine (Ky.).
Poverty Pine (lit.).

Pinus muricata D. Don. **Bishop Pine.**

RANGE.—California coast (Mendocino County and south, in widely scattered stands, in coast ranges to San Luis Obispo County); Lower California (Cedros Islands and coast of Ensenada and San Quentin).

NAMES IN USE

Swamp Pine (Calif.).
Dwarf Marine Pine (Calif.).
Prickle-cone Pine (Calif.).
Bishop Pine (Calif. and Eng. lit.).
Anthony's Prickle-cone Pine (Calif. lit.).
Obispo Pine (Calif.).
Bull Pine (Calif.).
Scrub Pine (Calif.).

***Pinus echinata** Miller. **Shortleaf Pine.**

RANGE.—From New York (Long Island and Staten Island), to Florida (Chattahoochee region) and west through West Virginia, southwestern Illinois (northwestern Union County), and eastern Tennessee to southern Missouri, southwestern Arkansas, southeastern Oklahoma (Black Fork Mountain), and eastern Texas.[5]

NOTE ON NOMENCLATURE.—Formerly designated as *Pinus mitis* Michaux.

NAMES IN USE

Yellow Pine (N. Y., N. J., Pa., Del., Va., N. C., Ala., Miss., La., Ark., Mo., Ill., Ind.).
Shortleaf Pine (Va., Md., Ga.).
Shortleaved Pine (N. C., S. C., Ga., Ala., Miss., Fla., La., Tex., Ark.).
Spruce Pine (Del., Miss., Ark.).
Bull Pine (Va.).
Shortshat Pine (Del.).
Pitch Pine (Mo.).
Poor Pine (Fla.).
Shortleaved Yellow Pine (trade).
Rosemary Pine and Rosemary Shortleaf (N. C.).
Virginia Yellow Pine (Va., in part).
North Carolina Yellow Pine (N. C. and Va., in part).
North Carolina Pine (N. C. and Va., in part; trade).
Carolina Pine (N. C. and Va., in part).
Slash Pine (N. C., Va., in part).
Oldfield Pine (N. C., Ala., Miss.).
Forest Pine (N. C.).
Southern Yellow Pine (trade).
Arkansas Shortleaf Pine (trade).
Arkansas Soft Pine (trade).
Rosemary (La., Tex.).

***Pinus glabra** Walter. **Spruce Pine.**

RANGE.—Coast region from South Carolina (Santee River) to Central and northwestern Florida (Chattahoochee region) and west to southeastern Louisiana.

NAMES IN USE

Spruce Pine (S. C., Ala., Fla.).
Cedar Pine (Miss., La.).
White Pine (S. C., Ga., Fla.).
Walter's Pine (S. C.).
Lowland Spruce Pine (Fla.).
Poor Pine (Fla.).
Kingstree (S. C.).
Black Pine (Ala.).
Bottom White Pine (Ga.).
Southern White Pine (trade).

[5] Britton & Shafer (N. Am. Trees, 32, 1908) give the range of this pine as extending westward to Kansas. It occurs in Illinois, but the Forest Service has no record of its occurrence in Kansas.

*Pinus banksiana Lambert. Jack Pine.

RANGE.—Nova Scotia to northern New Hampshire and west through Great Lakes and Hudson Bay (southern shores) region to Great Bear Lake, Mackenzie River, and Rocky Mountains; south into northern Maine, northern New Hampshire and Vermont, Massachusetts (Nantucket Island), northern New York, Michigan, northern Illinois (vicinity Lake Michigan), Wisconsin, and central and southeastern Minnesota.

NOTE ON NOMENCLATURE.—Formerly designated as *Pinus divaricata* (Aiton) Du Mont de Cours.

NAMES IN USE

Scrub Pine (Me., Vt., N. Y., Wis., Mich., Minn., Ontario).
Gray Pine (Vt., Minn., Mich., Ontario).
Jack Pine (Mich., Minn., Canada).
Princes Pine (Ontario).
Black Jack Pine (Wis.).
Black Pine (Minn.).
Cypress (Quebec to Hudson Bay).
Canada Horn-cone Pine (Calif. lit.).
Chek Pine.
Sir Joseph Banks Pine (England).
"Juniper" (Canada).
Banksian Pine (lit.).
Hudson Bay Pine (trade).
Northern Scrub Pine (lit.).

*Pinus palustris Miller. Longleaf Pine.

RANGE.—Coast region from southeastern Virginia (Norfolk) to southern Florida (Indian and Caloosahatchee Rivers) and westward to eastern Texas (Trinity River); to northwestern Georgia, northward in Alabama to the northern part of the State (Clay, Fayette, Walker, and Winston Counties), central and western Mississippi (Adams, Hinds, Newton, and Kemper Counties), and in western Louisiana (almost reaching the north line of the State).

NAMES IN USE

Longleaved Pine (Va., N. C., S. C., Ga., Ala., Fla., Miss., La., Tex.).
Southern Pine (N. C., Ala., Miss., La., and trade).
Yellow Pine (Del., N. C., S. C., Ala., Fla., La., Tex., and trade).
Turpentine Pine (N. C.).
Rosemary Pine (N. C.).
Brown Pine (Tenn.).
Hard Pine (Ala., Miss., La.).
Georgia Pine (general, Del.).
Fat Pine (southern United States).
Southern Yellow Pine (general and trade).
Southern Hard Pine (general).
Southern Heart Pine (general).
Southern Pitch Pine (general).
Heart Pine (N. C. and South Atlantic region).
Pitch Pine (Atlantic region).
Longleaved Yellow Pine (Atlantic region and trade).
Longleaved Pitch Pine (Atlantic region).
Longstraw Pine (Atlantic region).
North Carolina Pitch Pine (Va., N. C.).
Georgia Yellow Pine (Atlantic region and trade).
Georgia Heart Pine (general).
Georgia Longleaved Pine (Atlantic region).
Georgia Pitch Pine (Atlantic region).
Florida Yellow Pine (Atlantic region).
Florida Pine (Atlantic region).
Florida Longleaved Pine (Atlantic region).
Texas Yellow Pine (Atlantic region).
Texas Longleaved Pine (Atlantic region).
Florida Longleaf Yellow Pine (trade).
Longleaf Pine.
Broom Pine (lit.).

×Pinus sondereggeri H. H. Chapman. Hybrid.

RANGE.—Louisiana (Winn, La Salle, Calcasieu, Rapides, and Allen Parishes); also in southeastern Texas (Polk County).

NOTE ON NOMENCLATURE.—Believed to be a hybrid between *Pinus palustris* Miller and *Pinus taeda* Linnaeus.

*Pinus caribaea Morelet. Slash Pine.

RANGE.—Coast region (60 to 100 miles inland) from South Carolina to southern Florida (Keys); westward in the coast region (in Alabama up to Dallas and Washington Counties) of the Gulf States to eastern Louisiana (Washington, St.

Tammany, eastern Livingston, and southern Tangipahoa Parishes—W. R. Mattoon). Occurs also in Honduras, eastern Guatemala, Bahamas, Cuba, and Isle of Pines.

NOTE ON NOMENCLATURE.—Formerly designated as *Pinus cubensis* Grisebach and as *Pinus heterophylla* (Elliott) Sudworth, and as *Pinus Elliottii* Engelmann.

NAMES IN USE

Slash Pine (Ala., Miss., Ga., Fla.).
Swamp Pine (Fla., Miss., Ala., in part).
Bastard Pine (Ala. lumbermen, Fla.).
Meadow Pine (Fla., eastern Miss., in part).
Pitch Pine (Fla.).
She Pitch Pine (Ga.).
She Pine (Ga., Fla.).
Spruce Pine (southern Ala.).
Saltwater Pine (Fla.).

LARIX Adanson

*Larix laricina (DuRoi) Koch.[6] Tamarack.

RANGE.—From Newfoundland and Labrador northward, through the Hudson Bay region, to the Mackenzie River (in the Arctic Circle) and reappearing in Alaska between Cook Inlet and the Yukon River; southward in the east to northern and eastern Pennsylvania, western Maryland (Garrett County), West Virginia (Preston County), northern Ohio, Indiana, and Illinois, and northeastern Minnesota; in western Canada extending southward along the eastern base of the Rockies.

NOTE ON NOMENCLATURE.—Formerly and still, designated as *Larix americana* Michaux.

NAMES IN USE

Larch (Vt., Mass., R. I., Conn., N. Y., N. J., Pa., Del., Wis., Minn., Ohio, Ontario, Minn.).
Tamarack (Me., N. H., Vt., Mass., R. I., N. Y., N. J., Pa., Ind., Ill., Wis., Mich., Minn., Ohio, Ontario).
Hackmatack (Me., N. H., Mass., R. I., Del., Ill., Minn., Ontario).
American Larch (Vt., Wis., nurserymen).
Juniper (Me., New Brunswick to Hudson Bay).
Black Larch (Minn.).
Epinette Rouge (Quebec).
Ka-neh-tens="The leaves fall" (Indians, N. Y.).
Red Larch (Mich.).
Hacmack (lit.).

*Larix occidentalis Nuttall. Western Larch.

RANGE.—Southern British Columbia (and on the east slope of the Cascades to about latitude 44°) and south in the Cascade Mountains to the Columbia River, and to western Montana; also in Blue Mountains of Washington and northeastern Oregon; northern Idaho (southern Idaho County, on the South Fork of Salmon River at Warm Lake; also on Johnson Creek in Trapper Flat).

NAMES IN USE

Tamarack (Oreg.).
Hackmatack.
Larch (Idaho, Wash., trade, etc.).
Red American Larch.
Western Tamarack.
Great Western Larch (Calif. lit.).
Western Larch (English and American trade; Mont.).
Montana Larch (trade).
Mountain Larch (trade).
British Columbia Tamarack (B. C. trade).
Oregon Larch (Pacific coast trade.)

[6] *Larix alaskensis* Wight, Alaska Larch, discovered in 1902 along the Upper Kuskokwim River to the Yukon and Tanana Rivers, Alaska, and characterized in 1907, appears to be closely related to *Larix laricina*, but is probably specifically distinct.

Larix lyallii Parlatore. **Alpine Larch.**

RANGE.—High mountains (4,000 to 8,000 feet) of Northwestern States, from Montana to Washington and Oregon, and northward in adjacent territory (southern British Columbia and Alberta).

NAMES IN USE

Tamarack (Mont., Idaho, Wash., Oreg.).
Larch (Idaho, Wash., Oreg.).
Mountain Larch.
Lyall's Larch (lit.).
Woolly Larch (Calif. lit.).
Alpine Larch (Wash.).
Lyall Tamarack (lit.).
Mountain Tamarack (lit.).

PICEA Link

*Picea mariana (Miller) Britton, Sterns, and Poggenberg. **Black Spruce.**

RANGE.—Labrador to the Mackenzie River (lat. 65°), and northwestward into Alaska (White River); southward through Newfoundland, eastern Canada, Michigan, Wisconsin, Minnesota, to Central Pennsylvania, and in the mountains to northern Virginia.

NOTE ON NOMENCLATURE.—Long known under the name *Picea nigra* (Aiton) Link.

NAMES IN USE

Black Spruce N. H., Vt., Mass., R. I., N. Y., Pa., W. Va., N. C., S. C., Wis., Mich., Minn., Ont., Eng. and trade).
Double Spruce (Me., Vt., Minn.).
Blue Spruce (Wis.).
Spruce (Vt.).
White Spruce (W. Va.).
Yew Pine (W. Va.).
Juniper (N. C.).
Spruce Pine (W. Va., Pa.).
He Balsam (Del., N. C.).
Epinette Jaune (Quebec).
Water Spruce (Canada, Me.).
Eastern Spruce (trade—in part).

Picea mariana brevifolia Rehder. **Shortleaf Black Spruce.**

RANGE.—Within the range of the species in the United States in cold spagnum swamps.—Its characteristic short leaves are doubtless caused by the unfriendly nature of habitat.

NAMES IN USE

Swamp Spruce (lit.).
Shortleaf Black Spruce.

VARIETIES DISTINGUISHED IN CULTIVATION

Picea mariana doumetti (Carrière) Beissner.
Picea mariana pumila (Carrière) Sudworth.
Picea mariana humilis Sudworth.
Picea mariana argenteo-variegata (Beissner) Sudworth.
Picea mariana aurescens Sudworth.
Picea mariana albescens Sudworth.

*Picea rubra Link.[7] **Red Spruce.**

RANGE.—Prince Edward Island southward to the coast of Massachusetts and through New England and New York and northern Pennsylvania to North Carolina and Tennessee (high mountains). Range imperfectly known.

NOTE ON NOMENCLATURE.—Formerly designated as *Picea rubens* Sargent.

[7] *Picea australis* Small, Southern Spruce, characterized by J. K. Small (Flora Southeastern States, 30, 1903), appears to be closely related to *Picea rubra*, and may prove to be a distinct species. I have not seen the tree nor specimens of it. *Picea alba* Chapman (Flora Southern States), not of Link, so far as now known, occurs on the high slopes and summits of mountains in Virginia and North Carolina.

NAMES IN USE

Red Spruce (trade).
Yellow Spruce (N. Y.).
North American Red Spruce (foreign lit.).
Spruce (N. C.).
He Balsam (N. C.).
West Virginia Spruce (trade).
Canadian Spruce (trade).
Adirondack Spruce (trade).
Eastern Spruce (trade—in part).

VARIETIES DISTINGUISHED IN CULTIVATION

Picea rubens coerulea (Loudon) Sudworth.
Picea rubra coerulea (Loudon) Forbes.
Picea rubens pendula (Carrière) Sudworth.
Picea rubra pendula Carrière.
Picea rubens gracilis (Knight) Sudworth.
Picea rubra gracilis (Knight) Carrière.

*Picea glauca (Moench) Voss. White Spruce.

RANGE.—Labrador to Hudson Bay and northwestward through Alaska to Bering Strait; southward in the Atlantic region to Maine, New Hampshire, Vermont, northern New York, and in the Great Lakes region to Michigan (Saginaw Bay), Wisconsin and Minnesota.

NOTE ON NOMENCLATURE.—Formerly designated as *Picea canadensis* (Miller) Britton, Sterns, and Poggenberg, and as *Picea alba* Link.

NAMES IN USE

White Spruce (Vt., N. H., Mass., N. Y., Wis., Mich., Minn., Ont., and trade).
Single Spruce (Me., Vt., Minn.).
Bog Spruce (New Eng.).
Skunk Spruce (Wis., Me., New Eng., Ont.).
Cat Spruce (Me., New Eng.).
Spruce (Vt.).
Pine (Hudson Bay).
Double Spruce (Vt.).
Blue Spruce (Me.).
Eastern Spruce (trade—in part).
Canadian Spruce.
Adirondack Spruce (trade).

VARIETIES DISTINGUISHED IN CULTIVATION

Picea glauca acutissima (Beissner) Sudworth.
Picea glauca compressa (Beissner) Sudworth.
Picea glauca nana (Loudon) Sudworth.
Picea glauca nana glaucifolia Sudworth.
Picea glauca echinoformis (Carrière) Sudworth.
Picea glauca compacta gracilis (Beissner) Sudworth.
Picea glauca compressiformis Sudworth.
Picea glauca nutans Sudworth.
Picea glauca aurea (Beissner) Sudworth.

*Picea glauca albertiana (S. Brown) Rehder. Western White Spruce.

RANGE.—South Dakota (Black Hills), northern Wyoming, Montana, Washington, and northward at low altitude through the Canadian Rockies in Alberta and British Columbia.

NOTE ON NOMENCLATURE.—First described in 1907 as *Picea albertiana* S. Brown.

NAMES IN USE

White Spruce.
Western White Spruce (lit.).
Alberta Spruce (lit.).
Black Hills Spruce (Hort.).

*Picea engelmannii Engelmann. Engelmann Spruce.

RANGE.—From southeastern (Chiricahua Mountains) and northern Arizona and southern New Mexico northward through the Rocky Mountain region to British Columbia, and westward to the eastern slopes of the Cascade Mountains in Oregon and Washington; occurs also in a small patch, in the northeast corner

of Shasta County, California, on the South Fork of Clark Creek (tributary of Pitt River), about 8 miles northwest of Cayton Post Office. (Discovered by W. H. Snell, Southern Pacific Railroad timber cruiser, and reported through Forest Service District 5).

NAMES IN USE

Engelmann's Spruce (Utah, Idaho).
Balsam (Utah).
White Spruce (Oreg., Colo., Utah, Idaho).
White Pine (Utah, Idaho).
Mountain Spruce (Mont.).
Arizona Spruce (Cal. lit.).
Silver Spruce (Colo.).

VARIETIES DISTINGUISHED IN CULTIVATION

Picea engelmannii griseifolia Sudworth.
Picea engelmannii argyrophylla Sudworth.
Picea engelmannii minutifolia Sudworth.

*Picea pungens Engelmann. **Blue Spruce.**

RANGE.—Central Rocky Mountain region—Colorado, eastern Utah, southern and northwestern Wyoming, and northern New Mexico (Santa Fe National Forest), also in Datil and Gila National Forests—fide F. Grubb; Apache, Lincoln National Forest and Arizona (Apache National Forest—fide J. D. Guthrie; Kaibab National Forest—fide S. S. Stewart; Coconino National Forest—fide W. M. Drake).

NOTE ON NOMENCLATURE.—Formerly designated as *Picea parryana* (André) Parry.

NAMES IN USE

Parry's Spruce (Utah).
Blue Spruce (Colo.).
Spruce.
Balsam (Colo., Utah).
White Spruce (Utah, Colo.).
Silver Spruce (Colo.).
Colorado Blue Spruce (Colo.).
Prickly Spruce (lit.).
Water Spruce (Colo.).
Colorado Spruce (Colo.).

VARIETIES DISTINGUISHED IN CULTIVATION

Picea pungens glaucescens Sudworth.
Picea pungens cyanea Sudworth.
Picea pungens argentea Beissner.
Picea pungens glauca pendens Sudworth.
Picea pungens glauca kosteri Hort.[8]

*Picea sitchensis (Bongard) Carrière. **Sitka Spruce.**

RANGE.—Coast region (extending inland about 50 miles) from the east end of Kadiak Island and Alaska to northern California (Mendocino County); in Washington as far inland as the Nisqually River.

NAMES IN USE

Tideland Spruce (Cal., Oreg., Wash.).
Menzies' Spruce.
Western Spruce.
Great Tideland Spruce (Cal. lit.).
Sitka Spruce (trade).
Yellow Spruce (trade).
Western Sitka Spruce (trade).
Silver Spruce (trade).
Sequoia Silver Spruce (trade).
Spruce (trade).
West Coast Spruce (trade).

Picea breweriana S. Watson. **Weeping Spruce.**

RANGE.—Northern California (Siskiyou Mountains), very local, and southern Oregon; also at the head of Illinois River in the Oregon coast ranges.

NAMES IN USE

Weeping Spruce.
Brewer's Spruce.
Siskiyou Spruce (Germ. lit.).

[8] One of the best known and popular of the cultivated forms of *Picea pungens* is a grafted plant known in the nursery trade as "*Picea pungens* var. *glauca Kosteri*," "Koster's Blue Spruce."

TSUGA Carrière

*Tsuga canadensis (Linnæus) Carrière. Eastern Hemlock.

RANGE.—Nova Scotia to Minnesota (Carleton County; reported in St. Louis County prior to 1918) to southwestern Wisconsin, southern Michigan, and Indiana; southward in the Atlantic region to Delaware and Maryland; and southward along the mountains to northern Alabama and Georgia.

NAMES IN USE

Hemlock (Me., N. H., Vt., Mass., R. I., Conn., N. Y., N. J., Pa., Del., W. Va., Va., N. C., S. C., Ky., Wis., Mich., Minn., Ohio, Ontario, and trade).
Hemlock Spruce (Vt., R. I., N. Y., Pa., N. J., W. Va., N. C., S. C., England).
Spruce (Pa., W. Va., N. C.).
Wisconsin White Hemlock (trade).
(Eastern) Hemlock (trade).
Spruce Pine (Pa., Del., Va., N. C., Ga.).
Oh-neh-tah="Greens on the stick" (N. Y. Indians).
Canadian Hemlock (lit.).
New England Hemlock (lit.).
Pine (Pa.).
Red Hemlock (W. Va.).
White Hemlock (W. Va.).
Water Spruce (Ky.).
West Virginia Hemlock (trade).
Pennsylvania Hemlock (trade).
Pennsylvania White Hemlock (trade).
Huron Pine (Mich. trade).
Canada Hemlock (lit. and hort.).

VARIETIES DISTINGUISHED IN CULTIVATION

Tsuga canadensis pumila Sudworth.
Tsuga canadensis compacta minima Sudworth.
Tsuga canadensis globosa Beissner.
Tsuga canadensis gracilis Carrière.
Tsuga canadensis milfordensis Nicholson.
Tsuga canadensis erecta Sudworth.
Tsuga canadensis columnaris Beissner.
Tsuga canadensis macrophylla Beissner.
Tsuga canadensis paucifolia Sudworth.
Tsuga canadensis parvifolia (Veitch) Beissner.
Tsuga canadensis pendula Beissner.
Tsuga canadensis aurea Beissner.
Tsuga canadensis albo-spica (Gordon) Beissner.
Tsuga canadensis argenteo-variegata Sudworth.
Tsuga canadensis argentifolia Sudworth.
Tsuga canadensis microphylla Beissner.

*Tsuga caroliniana Engelmann. Carolina Hemlock.

RANGE.—Mountains of southwestern Virginia and western North Carolina to northern Georgia; very local.

NAMES IN USE

Hemlock (N. C., S. C.).
Southern Hemlock (lit.).
Spruce Pine (N. C.).
Hemlock Spruce (N. C.).
Carolina Hemlock (lit.).

*Tsuga heterophylla (Rafinesque) Sargent. Western Hemlock.

RANGE.—From southeastern Alaska to northern Idaho and northwestern Montana and southward in Washington and Oregon (in the Cascade and coast ranges; also on Sherman Creek, Ferry County, Washington) to California (Mendocino County and probably to Marin County).

NAMES IN USE

Hemlock Spruce (Cal.).
Western Hemlock (Cal.).
Hemlock (Alaska, Oreg., Idaho, Wash., Mont., and trade).
Western Hemlock Spruce (lit.).
California Hemlock Spruce.
Western Hemlock Fir (Eng.).
Prince Albert's Fir (Eng.).
Alaska Pine (Northwestern lumbermen).
West Coast Hemlock (trade).
Pacific Hemlock (trade).
Pacific Coast Hemlock (trade).
Pacific (western) Hemlock (trade).

VARIETY DISTINGUISHED IN CULTIVATION

Tsuga heterophylla latifolia Sudworth.

*Tsuga mertensiana (Bongard) Sargent. **Mountain Hemlock.**

RANGE.—Southeastern Alaska and southward in the mountains of British Columbia to Idaho and northern Montana, and southward in Washington and Oregon to California (Sierra Nevada to South Fork, Kings River); usually above 10,000 feet; at sea level only in the region of Sitka; Nevada (Mount Rose at 10,000 feet; Virginia Mountains to Davidson Mountains).

NAMES IN USE

Williamson's Spruce (Cal.).
Weeping Spruce (Cal.).
Alpine Spruce (Cal.).
Hemlock Spruce (Cal.).
Patton's Spruce.
Alpine Western Spruce (lit.).
Mountain Hemlock (Wash.).
Black Hemlock (lit.).
Patton's Hemlock (Wash.).
Alpine Hemlock (Alaska, Wash., Cal.).

VARIETY DISTINGUISHED IN CULTIVATION

Tsuga mertensiana argentea (Beissner) Sudworth.

PSEUDOTSUGA Carrière

*Pseudotsuga taxifolia (LaMarck) Britton. **Douglas Fir.**[9]

RANGE.—From the Rocky Mountain region (in United States) and northward to Central British Columbia; westward to the Pacific Coast and southward into northern Mexico and mountains of west Texas.

NOTE ON NOMENCLATURE.—Formerly designated as *Pseudotsuga douglasii* Carrière, and as *Pseudotsuga mucronata* (Rafinesque) Sudworth.

NAMES IN USE

Red Fir (Oreg., Wash., Idaho, Utah, Mont., Colo., and trade).
Douglas Spruce (Calif., Colo., Mont.).
Douglas Fir (Utah, Oreg., Colo.).
Yellow Fir (Oreg., Mont., Idaho, Wash., and trade).
Spruce (Mont.).
Fir (Mont., and trade).
Oregon Pine (Calif., Wash., Oreg., and trade).
Red Pine (Utah, Idaho, Colo.).
Puget Sound Pine (Wash.).
Douglas-tree.
Cork-barked Douglas Spruce (var. *suberosa* Lemmon.).
Red Spruce (Colo.).
Douglas Yellow Fir (trade).
Oregon Fir (trade).
Pacific Coast Douglas Fir (trade).
Montana Fir (trade).
National Yellow Fir (trade).
Golden Rod Douglas Fir (trade).
Yellow Douglas Fir (trade).
"Santiam" Quality Fir (trade).

[9] There has long been belief among European botanists that our Douglas Fir represents at least two distinct species, one ranging through the Pacific Slope region and eastward into the northern Rocky Mountain region, the other being found roughly in the central and southern Rockies. Augustine Henry and Margaret G. Flood (in Proc. Royal Irish Acad., vol. 35, sect. B; 62–92, pl. 12–14, 1920) propose to designate the Pacific Slope form as "*Pseudotsuga Douglasii* Carrière," and the northern Rocky Mountain form as "*P. Douglasii* var. *caesia* Schwerin;" while for the central and southern Rocky Mountain form they propose the name "*P. glauca* Mayr."

Pseudotsuga taxifolia pendula (Engelmann) Sudworth.

Weeping Douglas Fir.

VARIETIES DISTINGUISHED IN CULTIVATION

Pseudotsuga taxifolia pendula caerulea Sudworth.
Pseudotsuga taxifolia glauca (Beissner) Sudworth.
Pseudotsuga taxifolia fastigiata (Knight) Sudworth.
Pseudotsuga taxifolia standishiana (Gordon) Sudworth.
Pseudotsuga taxifolia dumosa (Carrière) Sudworth.
Pseudotsuga taxifolia compacta (Beissner) Sudworth.
Pseudotsuga taxifolia elegans (Beissner) Sudworth.
Pseudotsuga taxifolia argentea (Beissner) Sudworth.
Pseudotsuga taxifolia argentea densa Sudworth.
Pseudotsuga taxifolia variegata (Forbes) Sudworth.
Pseudotsuga taxifolia stairi (Beissner) Sudworth.
Pseudotsuga taxifolia brevifolia (Hort. Kew.) Sudworth.
Pseudotsuga taxifolia revoluta (Hort. Kew.) Sudworth.

***Pseudotsuga macrocarpa** (Torrey) Mayr. **Bigcone Spruce.**

RANGE.—Southern California (San Bernardino Mountains, and Santa Inez Mountains to the Cuyamaca Mountains).

NAMES IN USE

Spruce (Calif.).
Hemlock (Calif.).
Bigcone Spruce (lit.).
Bigcone Douglas Spruce (lit.)

ABIES Miller

***Abies fraseri** (Pursh) Poiret. **Southern Balsam Fir.**

RANGE.—High mountains of the Virginias, North Carolina, and Tennessee.

NAMES IN USE

Balsam (N. C., Tenn.).
Balsam Fir (N. C.).
Double Fir Balsam (Tenn.).
Double Spruce (N. C.).
She Balsam (N. C., Tenn.).
She Balsam Fir (N. C.).
Mountain Balsam (N. C.).
Healing Balsam.
Lashorn Balsam Spruce (N. C.).
Fraser Fir (lit.).
Eastern Fir (trade).
Southern Balsam Fir.

***Abies balsamea** (Linnæus) Miller. **Balsam Fir.**

RANGE.—From Newfoundland and Labrador to Hudson Bay and northwestward to Great Slave Lake and Mackenzie River; thence to the headwaters of the Yukon River, northeastern British Columbia and northwestern Alberta; southward to Pennsylvania (and along high mountains to southwestern Virginia), Michigan (Saginaw Bay), northern Minnesota, and northeastern Iowa.

NAMES IN USE

Balsam Fir (N. H., Vt., Mass., N. Y., Pa., W. Va., Wis., Mich., Minn., Nebr., Ohio, Ontario, Eng., and trade).
Balsam (Vt., N. H., N. Y., and trade).
Canada Balsam (N. C.).
Balm-of-Gilead.
Balm-of-Gilead Fir (N. Y., Pa., W. Va.).
Blister Pine (W. Va.).
Fir Pine (W. Va.).
Firtree (Vt.).
Single Spruce (N. Bruns. to Hudson Bay).
Silver Pine (Hudson Bay).
Sapin (Quebec).
Cho-koh-tung="Blisters" (N. Y. Indians).
Eastern Fir (trade).

Abies balsamea macrocarpa Kent. **Bigcone Balsam Fir.**

RANGE.—Region of northern Wisconsin.

NAME IN USE

Bigcone Balsam Fir

VARIETIES DISTINGUISHED IN CULTIVATION

Abies balsamea hudsonia (Knight) Veitch.
Abies balsamea brachylepis Willkom.
Abies balsamea longifolia (Loudon) Endlicher.
Abies balsamea caerulea Carrière.
Abies balsamea hemisphaerica Sudworth.
Abies balsamea prostrata (Knight) Carrière.
Abies balsamea paucifolia Sudworth.
Abies balsamea nudicaulis Carrière.
Abies balsamea versicolor Sudworth.
Abies balsamea argentifolia Sudworth.

***Abies lasiocarpa** (Hooker) Nuttall. **Alpine Fir.**

RANGE.—Rocky Mountain region from northern Arizona (San Francisco Mountains), New Mexico (Sandia and Mogollon Mountains) to Montana and Idaho, and westward through the mountains of Oregon and Washington, and northward to Alaska (latitude 61°); high ranges of British Columbia and Alberta.

NAMES IN USE [10]

Alpine Fir (Colo., trade).
Sub-Alpine Fir (Utah).
Balsam (Colo., Utah, Idaho, Oreg.).
White Fir (Idaho, Mont.).
White Balsam (Colo., Utah).
Oregon Balsam-tree.
Pumpkin-tree.
Mountain Balsam (Utah, Idaho).
Down-cone Fir (lit.).
Downy-cone Sub-Alpine Fir (Calif. lit).
Black Balsam (Colo.).
Balsam Fir (Wyo.).

VARIETY DISTINGUISHED IN CULTIVATION

Abies lasiocarpa cærulescens (Beissner) Sudworth

***Abies arizonica** Merriam. **Corkbark Fir.**

RANGE.—At present known in Arizona (San Francisco Mountains; Santa Catalina Mountains). Reported from southern Colorado (Cochetopa National Forest, in Saguache County); also from the Blue Range in the Apache National Forest; and from New Mexico in the Jemez Mountains in the Santa Fe and Carson National Forests, and in the Manzano National Forest.

NOTE ON NOMENCLATURE.—Designated by some authors as *Abies lasiocarpa arizonica* Lemmon.

NAMES IN USE

Cork-bark Fir (Colo.).
Arizona Cork Fir (lit.).
Arizona Fir (lit.).
Cork Fir (lit.).
(Arizona) Cork Bark Fir (trade).

***Abies grandis** Lindley. **Lowland White Fir.**

RANGE.—Coast region from Vancouver Island to California (Sonoma County), and from Washington and Oregon to northern Idaho and Montana.

NOTE ON NOMENCLATURE.—*Abies aromatica* Rafinesque (1832), an older name than *Abies grandis* Lindley (1833), possibly should be taken up for this species. In the author's opinion, however, this name is doubtfully applicable.

[10] In the Pacific Northwest it is common to speak of the species of Abies as "Balsam Firs," to distinguish them from Douglas Fir (Pseudotsuga). While the expression "True Firs" is sometimes used, the term "Balsam Firs" seems preferable.

NAMES IN USE

White Fir (Calif., Oreg., Wash., Idaho, Mont., and trade).
Silver Fir (Wash., Mont., Idaho).
Yellow Fir (Mont., Idaho).
Oregon White Fir (Calif.).
Western White Fir.
Grand or Oregon White Fir (Calif. lit.).
Great California Fir (lit.).
Puget Sound Fir (Eng. lit.).
Lowland Fir (lit.).
Rough-barked Fir (Wash.).
Great Silver Fir (Idaho, Mont.).
Balsam Fir (Oreg. and trade).
Lowland White Fir (trade).
Grand Fir (lit.).
Giant Fir (Eu. lit.).

VARIETIES DISTINGUISHED IN CULTIVATION

Abies grandis aurifolia Sudworth.
Abies grandis crassa Sudworth.

*Abies concolor Lindley & Gordon. White Fir.

RANGE.—Oregon (Siskiyou Mountains) to southern California (San Bernardino County); northern and southeastern Arizona (Santa Catalina, Rincon, Chiricahua, and Huachuca Mountains), and New Mexico to Colorado and Utah (Wasatch Mountains); Nevada; western Wyoming (plateau west of Maxon, Sweetwater County; west slope of Salt River Range, Uinta County); northern Mexico and Lower California.

NAMES IN USE

White Fir (Calif., Oreg., Idaho, Utah, Colo., and trade).
Balsam Fir (Calif., Oreg., Idaho, Colo., and trade).
Silver Fir (Calif., Colo.).
Balsam (Calif., Colo., Utah).
White Balsam (Utah).
Bastard Pine (Utah).
Balsam-tree (Idaho).
Black Gum (Utah).
California White Fir (Calif.).
Colorado White Fir (Colo., Calif. lit.).
Concolor Silver Fir (Eng. lit.).
Colorado Silver Fir (lit.).
Blue Fir (Colo.).

VARIETIES DISTINGUISHED IN CULTIVATION

Abies concolor pendens (Beissner) Sudworth.
Abies concolor varia Sudworth.
Abies concolor purpurea Sudworth.
Abies concolor purpurea compressa Sudworth.
Abies concolor angustata Sudworth.

Abies concolor lowiana (Murray) Lemmon.

RANGE.—California (Sierra Nevada) and southern Oregon (Siskiyou Mountains).

NOTE ON NOMENCLATURE.—Usually designated (in European gardens) as *Abies Lowiana* Murray.

NAMES IN USE

Pale-leaved White Fir (Calif. lit.).
California White Fir.
Pacific White Fir (lit.).

*Abies amabilis (Loudon) Forbes. Silver Fir.

RANGE.—From southeastern Alaska to Vancouver Island and British Columbia (Fraser River) and southward in the Cascade Mountains to northern Oregon; also in the coast mountains of Washington and Oregon.

NAMES IN USE

Red Fir.
Red Silver Fir (western mountains).
Fir (Calif.).
Lovely Red Fir (Calif. lit.).
Lovely Fir (Calif. lit.).
Amabilis or Lovely Fir (Calif. lit.).
"Larch" (Oreg. lumbermen).
White Fir (lit. and trade).
Lovely Silver Fir (lit.).
Silver Fir (trade).
Cascade Fir (lit.).

***Abies nobilis** Lindley. **Noble Fir.**

RANGE.—Washington (coast mountains in southwestern part of State; Olympic Mountains on Solduc River); and southward to northern California (Siskiyou Mountains); from Mount Baker southward (in the Cascade Mountains) to Oregon (Browder Ridge on headwaters of McKenzie River in Lane County). Reported from Vancouver Island (vicinity of Vernon Lake.—Fide Leo M. Martin, of the Crown Willamette Paper Company, per Geo. H. Cecil in letter, Aug. 10, 1918.

NAMES IN USE

Red Fir (Oreg.).
"Larch" (Oreg. lumbermen).
Noble Fir (Oreg.).
Bigtree.
Feather-cone Red Fir (Calif. lit.).
Noble or Bracted Red Fir (Calif. lit.).
Tuck Tuck (Pacific Indians).

VARIETIES DISTINGUISHED IN CULTIVATION

Abies nobilis glaucifolia Sudworth. **Abies nobilis robustifolia** Sudworth.

***Abies magnifica** A. Murray. **California Red Fir.**

RANGE.—California (Mount Shasta and throughout the western slopes of Sierra Nevada) and northward in the Cascade Mountains of southern Oregon.

NAMES IN USE

Red Fir (Calif.).
California Red-bark Fir (Calif.).
Magnificent Fir (Calif. lit.).
California Red Fir (Calif. lit. and trade).
Golden Fir (Calif. lit.).

***Abies magnifica shastensis** Lemmon. **Shasta Red Fir.**

RANGE.—Southern Oregon (Cascade Mountains) and California (Mount Shasta, Mount Eddy, Trinity Mountain, Scott Mountains; southward in the Sierras it occurs at several points in Fresno, Tulare, and Kern Counties). Range as yet insufficiently understood.

NOTE ON NOMENCLATURE.—Formerly designated as *Abies shastensis* Lemmon.

NAMES IN USE

Shasta Red Fir (Calif. lit.).
Shasta Fir (Calif. lit.).

VARIETIES DISTINGUISHED IN CULTIVATION

Abies magnifica cyanea Sudworth.
Abies magnifica xanthocarpa Lemmon. **Yellowcone Fir.**

Abies venusta (Douglas) K. Koch. **Bristlecone Fir.**

RANGE.—Southern California (Santa Lucia Mountains, Monterey County).

NAMES IN USE

Fringe Spruce.
Bristlecone Fir (Calif.).
Santa Lucia Fir (Eng. lit.).

SEQUOIA Endlicher

***Sequoia washingtoniana** [11] (Winslow) Sudworth. **Bigtree.**

RANGE.—California (from latitude 39° to a little south of latitude 36°, that is, from Middle Fork of American River and along the western slope of Sierra Nevada to the headwaters of Deer Creek. Altogether there are some twenty-

[11] It is held by some botanists that since the long-used name for this tree, *S. gigantea*, is now excluded (for reasons shown below), *S. wellingtonia* is the next tenable name and that the really older name, *S. washingtoniana*, should be neglected because thought not to be technically established. The first name applied to this tree is *Wellingtonia gigantea* Lindley (London Gard. Chron., 820, 823, 1853). The second name is

six scattered groves, each containing from a few hundred to several thousand trees.

NOTE ON NOMENCLATURE.—Formerly designated as *Sequoia gigantea* Decaisne and at present by some authors as *Sequoia wellingtonia* Seeman.

NAMES IN USE

Sequoia (Calif.).
Bigtree (Calif.).
Giant Sequoia (Calif. and hort.).
Mammoth-tree (Calif. and in Eng. cult.).

VARIETIES DISTINGUISHED IN CULTIVATION

Sequoia washingtoniana pendula (Beissner) Sudworth.
Sequoia washingtoniana glauca (Gordon) Sudworth.
Sequoia washingtoniana aurea (Beissner) Sudworth.
Sequoia washingtoniana argentea (Beissner) Sudworth.
Sequoia washingtoniana variegata (Gordon) Sudworth.
Sequoia washingtoniana holmsi (Beissner) Sudworth.
Sequoia washingtoniana glaucescens pyramido-compacta Sudworth.
Sequoia washingtoniana pygmaea (Beissner) Sudworth.

*Sequoia sempervirens (Lambert) Endlicher. Redwood.

RANGE.—From the southern borders of Oregon (on Chetco River, about 6 miles from mouth, and on Winchuck River), southward in the coast region (20 to 30 miles inland) through California (to Salmon Creek Canyon, 12 miles south of Punta Gorda, Monterey County).

NAMES IN USE

Redwood (Calif. and Am. lit.).
Sequoia (Calif., Eng. trade).
Coast Redwood (Calif.).
California Redwood (Eng. lit., Am. trade).
Humboldt Redwood (Calif. trade).
California Cedar (Eng. trade).

Sequoia gigantea Decaisne (Bull. Bot. Soc. France, I, 70, 1854). The third name is *Taxodium Washingtonianum* Winslow (Cal. Farmer, September, 1854). The fourth name is *Sequoia Wellingtonia* Seeman (Bonplandia, III, 27, 1855).

The Bigtree is now conceded rightly to belong to the genus Sequoia of Endlicher (Syn. Conif., 147, 1847), and the specific term *gigantea*, being the first applied, the apparently correct name would be *Sequoia gigantea*, the name applied by Decaisne (l. c., 1854). But this name being identical with one previously applied by Endlicher in 1847 to the California Redwood must, by reason of being antedated, fall into synonymy and the next oldest name be sought for the Bigtree.

Passing over Winslow's *Taxodium Washingtonianum* (l. c., 1854) on the ground that it is thought not to be properly published, some botanists would now apply Seeman's *Sequoia Wellingtonia* (l. c., 1855). It is here maintained, however, that the rightful name should be *Sequoia washingtoniana* (Winslow) Sudworth and for the following reasons:

It has been asserted that *Taxodium Washingtonianum* Winslow (l. c., 1854) is technically unpublished and therefore to be disregarded. The writer believes this name was tenably published, a conviction which is supported by the following quotation from Winslow's published letter (l. c., 1854):

"The name that has been applied to this tree by Professor Lindley, an English botanist, is *Wellingtonia gigantea*. * * *

"If the tree be a *Taxodium*, let it be called *Taxodium Washingtonianum*. If a new genus, *Washingtonia Californica*."

According to Section III, Canon 9, of the American Code of Botanical Nomenclature, Winslow's *Taxodium Washingtonianum* is validly published.

This is a common and expedient method employed by botanists in publishing new names for plants found to have been previously characterized under synonyms, which results in duplicate names in the same genus and therefore often leaves a plant without a tenable name. The method of referring to the previously published species as a type is usually to print such species' name and author in connection with the newly proposed name and in such a way that the two designations are seen to be presented as equivalents, the one to replace the other.

Now, since *Wellingtonia gigantea* Lindley is a recognized previously published species, it would seem undeniable that Winslow's intention was to supplant Lindley's name by *Taxodium Washingtonianum*—entirely, of course, because his American patriotism preferred that an American monster tree should bear the name of an American rather than that of an English general. It is maintained here that Winslow definitely pointed out the tree he had in mind by stating that Lindley had called it *Wellingtonia gigantea* (an undisputably published name) and that he effected the publication of *Taxodium Washingtonianum* for this tree by proposing this name as a substitute for Lindley's name.

In interpreting the fundamental object of the article cited for the publication of species and applying it to all cases likely to arise, it would seem the duty of the interpreter to abide by the principle involved in the law and to be influenced rather by the actual meaning of a describer's combined words than by his unfortunate lack of technical procedure in description.

VARIETIES DISTINGUISHED IN CULTIVATION

Sequoia sempervirens gracilis Carrière.
Sequoia sempervirens taxifolia Carrière.
Sequoia sempervirens adpressa Carrière.
Sequoia sempervirens picta Sudworth.
Sequoia sempervirens albo-spica (Gordon) Beissner.
Sequoia sempervirens glauca Gordon.

TAXODIUM Richard

***Taxodium distichum** (Linnæus) Richard. **Southern Cypress.**

RANGE.—From southern Delaware (Sussex County) southward in the coast region to southern Florida (Everglade Keys); westward in the Gulf Coast region to Texas (Devil's River) and northward through Louisiana to Oklahoma, Arkansas, northern and western Mississippi and Tennessee, southeastern Missouri, western Kentucky, southern Illinois, and southwestern Indiana (Knox County).

NAMES IN USE

Louisiana Red Cypress (trade).
Gulf Red Cypress (trade).
Tidewater Red Cypress (trade).
Gulf Coast Red Cypress (trade).
Bald Cypress (Del., N. C., S. C., Ala., La., Fla., Tex., Ark., Mo., Ill., Ind., and hort.).
White Cypress (N. C., S. C., Fla., Miss., trade—inland type).
Black Cypress (N. C., S. C., Ala., Tex., trade).
Red Cypress (Ga., Miss., La., Tex., trade—coast type).
Swamp Cypress (La.).
Cypress (Del., N. C., Tenn., S. C., Fla., Miss., Ky., Mo., Ill., trade).
Deciduous Cypress (Del., Ill., Tex.).
Southern Cypress (Ala. and trade).
Buck Cypress (N. C.).
Cow Cypress (N. C.).
River Cypress (lit.).
Gulf Cypress (trade).
Yellow Cypress (trade).
Common Baldcypress (inland type).

VARIETIES DISTINGUISHED IN CULTIVATION

Taxodium distichum pendulum (Forbes) Carrière.
Taxodium distichum pendulum elegans Beissner.
Taxodium distichum pendulum novum Beissner.
Taxodium distichum patens (Aiton) Endlicher.
Taxodium distichum denudatum Carrière.
Taxodium distichum knighti Carrière.
Taxodium distichum pyramidatum Carrière.
Taxodium distichum microphyllum (Brongniart) Henkel and Hochstetter.
Taxodium distichum intermedium Carrière.
Taxodium distichum nanum Carrière.
Taxodium distichum nigrum Gordon.

***Taxodium adscendens** Brongniart. **Pond Cypress.**

RANGE.—From southeastern Virginia (Dismal Swamp) to western Florida and southern Alabama.

NOTE ON NOMENCLATURE.—Formerly, and still, designated as *Taxodium distichum imbricarium* (Nuttall) Sargent and as *Taxodium imbricarium* (Nuttall) Harper. Frequently cultivated, and under the names *Glyptostrobus pendulus* Endlicher and "*Glyptostrobus sinensis*" hort.

NAMES IN USE

Cypress (N. C.). Pond Cypress (lit.).

LIBOCEDRUS [12] Endlicher

***Libocedrus decurrens** Torrey. **Incense Cedar.**

RANGE.—From Oregon (North Fork of Santiam River and southward on the western slopes of the Cascade Mountains) through California (western slopes of Sierra Nevada and coast ranges from southern border af Mendocino County to San Bernardino, San Jacinto, and Cuayamaca Mountains); western Nevada (Washoe Mountains); Lower California (San Pedro Martir and Sierra del Pimal Mountains).

[12] Britton and Shafer (North American Trees, 92, 1908) have taken up for this group *Heyderia* K. Koch (1873), designating the Incense Cedar as *Heyderia decurrens* (Torrey) Koch.

NAMES IN USE

White Cedar (Calif., Oreg.).
Cedar (Calif., Oreg., and trade).
Incense Cedar (Calif., Oreg., and trade).
Post Cedar (Calif., Nev.).
Juniper (Nev.).
Bastard Cedar (Calif., Wash.).
Red Cedar.
California Post Cedar (Calif. lit.).
California Incense-Cedar (lit. and hort).
Roughbark Cedar (trade).

VARIETIES DISTINGUISHED IN CULTIVATION

Libocedrus decurrens depressa Gordon.
Libocedrus decurrens columnaris Beissner.
Libocedrus decurrens compacta Beissner.
Libocedrus decurrens glauca Beissner

THUJA Linnæus

*Thuja occidentalis Linnæus. Northern White Cedar.

RANGE.—From Nova Scotia and New Brunswick to Lake Winnipeg and south to central Minnesota and Michigan, northern Illinois and Indiana, and in the Atlantic region to New Jersey and southward along the mountains to North Carolina and northeastern Tennessee (Holston River).

NAMES IN USE

Arborivtae (Me., Vt., Mass., R. I., Conn., N. Y., N. J., Pa., Del., Tenn., Va., W. Va., Ind., Ill., Wis., Mich., Minn., Ohio, Ont.).
White Cedar (Me., N. H., Vt., R. I., Mass., N. Y., N. J., Va., N. C., Wis., Mich., Minn., Ont., trade).
Cedar (Me., Vt., N. Y.).
American Arborvitae (N. Y., hort., and Eng.).
Oo-soo-ha-tah=Feather-leaf (Indians).
Vitae (Del.).
Atlantic Red Cedar (Calif. lit.).
Michigan White Cedar (trade).
Northern White Cedar (trade).
New Brunswick Cedar (trade).
Swamp Cedar (N. Y.).

VARIETIES DISTINGUISHED IN CULTIVATION

Thuja occidentalis ellwangeriana (Gordon) Beissner.
Thuja occidentalis spaethi Beissner.
Thuja occidentalis wareana Gordon.
Thuja occidentalis wareana lutescens Beissner.
Thuja occidentalis wareana globosa Beissner.
Thuja occidentalis densa Gordon.
Thuja occidentalis walthamensis Gordon.
Thuja occidentalis fastigiata Beissner.
Thuja occidentalis fastigiata nova Beissner.
Thuja occidentalis l'haveana Beissner.
Thuja occidentalis rosenthali Beissner.
Thuja occidentalis viridis Beissner.
Thuja occidentalis theodonensis Beissner.
Thuja occidentalis tatarica Beissner.
Thuja occidentalis riversi Beissner.
Thuja occidentalis vervaeneana Gordon.
Thuja occidentalis lutea Veitch.
Thuja occidentalis lutea humilis Sudworth.
Thuja occidentalis aurea Gordon.
Thuja occidentalis varia Sudworth.
Thuja occidentalis pendula Gordon.
Thuja occidentalis pendula glaucescens Sudworth.
Thuja occidentalis reflexa Carrière.
Thuja occidentalis bodmeri Beissner.
Thuja occidentalis athrotaxoides Beissner.
Thuja occidentalis recurvata Beissner.
Thuja occidentalis recurvata argenteovariegata Beissner.
Thuja occidentalis recurva pusilla Sudworth.
Thuja occidentalis denudata Beissner.
Thuja occidentalis asplenifolia Carrière.
Thuja occidentalis gracilis Gordon.
Thuja occidentalis filicoides Beissner.
Thuja occidentalis cristata Gordon.
Thuja occidentalis boothi Beissner.
Thuja occidentalis globosa Gordon.
Thuja occidentalis globularis Beissner.
Thuja occidentalis hoveyi Gordon.
Thuja occidentalis spihlmanni Beissner.
Thuja occidentalis froebeli Beissner.
Thuja occidentalis parva Sudworth.
Thuja occidentalis albo-variegata Beissner.
Thuja occidentalis aureo-variegata Beissner.
Thuja occidentalis argentea Gordon.
Thuja occidentalis alba Gordon.
Thuja occidentalis little-gem Beissner.
Thuja occidentalis silver-queen Beissner.

*Thuja plicata D. Don. — Western Red Cedar.

RANGE.—From coast of southern Alaska (Baranoff Island) to northern California (Mendocino County); eastward through British Columbia and northern Washington to northern Idaho (southern Idaho County, on the Middle Fork of Salmon River, west side, between the mouths of Sheep and Jack Creeks) and Montana.

NOTE ON NOMENCLATURE.—Formerly designated as *Thuja gigantea* Nuttall.

NAMES IN USE

Red Cedar (Idaho, Oreg., Wash., Mont., B. C.).
Canoe Cedar (Oreg., Wash.).
Arborvitae (Calif.).
Shinglewood (Idaho).
Gigantic Cedar (Calif.).
Cedar (Oreg., Mont., Idaho, Pacific coast trade).
Gigantic Red Cedar (Calif. lit.).
Western Cedar.
Washington Red Cedar (trade).
Washington Cedar (trade).
Idaho Cedar (trade).
Oregon Cedar (trade).
California Cedar (trade).
British Columbia Cedar (trade).
Pacific Arborvitae (lit.).
Western Arborvitae (lit.).
Western Red Cedar (trade).
Red Cedar Pine (trade).
Lobb's Arborvitae (Eng.).
Pacific Red Cedar (Calif. lit.).
Giant Arborvitae (lit. and hort).

VARIETIES DISTINGUISHED IN CULTIVATION

Thuja plicata gracillima (Beissner) Sudworth.
Thuja plicata atrovirens (Gordon) Sudworth.
Thuja plicata aurescens (Beissner) Sudworth.
Thuja plicata argenteo-versicolor Sudworth.
Thuja plicata flava Sudworth.
Thuja plicata variegata Carrière.
Thuja plicata compacta (Carrière) Beissner.
Thuja plicata llaveana Gordon.
Thuja plicata minima Gordon.
Thuja plicata erecta (Gordon) Sudworth.
Thuja plicata pumila (Gordon) Sudworth.
Thuja plicata penduliformis Sudworth.
Thuja plicata cristatiformis Sudworth.

CUPRESSUS Linnæus

Cupressus macrocarpa Gordon. — Monterey Cypress.

RANGE.—Southern California coast (from Cypress Point to south shores of Carmel Bay and on Point Lobos).

NAME IN USE

Monterey Cypress (Calif.)

VARIETIES DISTINGUISHED IN CULTIVATION

Cupressus macrocarpa angulata Lemmon.
Cupressus macrocarpa lambertiana (Carrière) Masters.
Cupressus macrocarpa crippsii Masters.

Cupressus sargentii Jepson.[13] — Sargent Cypress.

RANGE.—California coast region (Red Mountain, southern Mendocino County to Mount Tamalpais, Cedar Mountain, southeastern Alameda County, Santa Cruz Mountains, and Santa Lucia Mountains; San Diego County—Cedar Canyon at a point between El Nido and Dulzura).

[13] Flor. Calif., Pt. I, 61, 1909; Silva of California, 158, 1910. This species is the *Cupressus goveniana* of Engelmann (1880), in part, not of Gordon (1849). Dr. Engelmann appears to have confused this cypress with the *Cupressus goveniana* of Gordon, which is another distinct species, and this error was not corrected until 1909, when W. L. Jepson (l. c.) named the tree *Cupressus Sargentii*.

NAME IN USE

Sargent Cypress

VARIETIES DISTINGUISHED IN CULTIVATION

Cupressus sargentii parva Sudworth.
Cupressus sargentii huberiana Carrière.
Cupressus sargentii glaucifolia Sudworth.
Cupressus sargentii gracilis (Nelson) Sudworth.
Cupressus sargentii cornuta Sudworth.
Cupressus sargentii viridis (Carrière) Sudworth.
Cupressus sargentii attenuata (Gordon) Sudworth.

Cupressus goveniana Gordon. **Gowen Cypress.**

RANGE.—Northern California (coast of Mendocino County, in a narrow strip three-fourths of a mile from the sea and inland about 3 miles).

NOTE ON NOMENCLATURE.—Includes the Dwarf Cypress, formerly designated as *Cupressus pygmaea* (Lemmon) Sargent.

NAMES IN USE

North Coast Cypress (Calif. lit.).
Gowen Cypress (lit.).
Mountain Cypress (lit.).

Cupressus macnabiana A. Murray. **Macnab Cypress.**

RANGE.—Southwestern Oregon (Josephine County); California (south and west of Clear Lake, Lake County; once reported from the southern base of Mount Shasta but at present not known to exist there); Trinity County; (Ukiah Valley) Mendocino County; Yuba County (near Dobbin); Lassen Buttes; southeastern Siskiyou and southwestern Mono Counties; Kern County (Sierras—on Piute Mountain; Amador County (Red Hill, 3 miles north of Oleta—Lloyd Austin).

NOTE ON NOMENCLATURE.—Includes *Cupressus Bakeri* Jepson and *Cupressus nevadensis* Abrams.

NAMES IN USE

Cypress.
White Cedar.
Shasta Cypress (Calif.).
McNab's Cypress (cult. Eng., Eu.).
California Mountain Cypress (Calif. lit.).
Gray Cypress (lit.).
Fragrant Cypress (lit.).

Cupressus guadaloupensis S. Watson. **Tecate Cypress.**

RANGE.—Southern California (San Diego County; Mount Tecate); Lower California (Mount San Pedro Martir and Guadalupe Island).

NAMES IN USE

Tecate Cypress.
Guadalupe Cypress (lit. and hort.).

***Cupressus arizonica** Greene. **Arizona Cypress.**

RANGE.—Arizona (central, eastern, and southern mountains—Santa Rita, Santa Catalina, Dragoon, and Chiricahua Mountains); New Mexico (San Francisco and San Luis Mountains); Mexico (Chihuahua).

NAME IN USE

Arizona Cypress (Ariz.)

***Cupressus glabra** Sudworth. **Smooth Cypress.**

RANGE.—Arizona (north slope of Verde River Canyon in Yavapai County; also on Pine Creek at "Natural Bridge"; Oak Creek Canyon; Santa Catalina and Santa Rita Mountains). Further investigation will probably extend the range considerably.

NOTE ON NOMENCLATURE.—Designated by some authors as *Cupressus arizonica* var. *bonita* Lemmon. In the writer's judgment, however, the original description accompanying this name does not clearly apply to the smooth Cypress.

NAMES IN USE

Red-bark Cypress.
Arizona Red-bark Cypress.
Sudworth's Silver Cypress (lit.).
Yew-wood (in allusion to the similar bark of the yew-tree).
Smooth Cypress (lit.).

CHAMÆCYPARIS Spach

***Chamæcyparis thyoides** (Linnæus) Britton, Sterns, and Poggenberg. **Southern White Cedar.**

RANGE.—In general from New Hampshire (vicinity of Concord and in towns of Rye and Hancock) and coast region from southern Maine (York County) to middle and west Florida; westward to Mississippi (Pearl River). More or less scattered in its occurrence throughout this range. It is found locally in Dismal Swamp, Virginia, in central South Carolina, and in Talbot County, Georgia.

NAMES IN USE

White Cedar (Mass., R. I., N. Y., N. J., Pa., Del., N. C., S. C., Fla., Ala., Miss.).
Swamp Cedar (Del.).
Post Cedar (Del.).
Juniper (Ala., N. C., Va., Fla.).
Southern White Cedar (trade).
White Cedar ("Juniper")—trade.

VARIETIES DISTINGUISHED IN CULTIVATION

Chamæcyparis thyoides glauca (Endlicher) Sudworth.
Chamæcyparis thyoides crocea Sudworth.
Chamæcyparis thyoides variegata (Loudon) Sudworth.
Chamæcyparis thyoides penduliformis Sudworth.
Chamæcyparis thyoides hoveyi (Veitch) Sudworth.
Chamæcyparis thyoides nana (Loudon) Sudworth.
Chamæcyparis thyoides atrovirens (Knight) Sudworth.
Chamæcyparis thyoides pyramidata (Beissner) Sudworth.
Chamæcyparis thyoides fastgiata cinereo-folia Sudworth.
Chamæcyparis thyoides leptoclada (Gordon) Sudworth.
Chamæcyparis thyoides pumila (Carrière) Sudworth.
Chamæcyparis thyoides ericoides (Knight) Sudworth.

***Chamæcyparis nootkatensis** (Lambert) Sudworth. **Alaska Cedar.**

RANGE.—From southwestern Alaska southward in the coast region through British Columbia, Washington, and Oregon (in Cascade Mountains as far as the Santiam River and Mount Jefferson); east in Washington to the headwaters of Yakima River; in southern Oregon (Jesephine County, Siskiyou Mountains—Whiskey Peak); in western Oregon (south-central Lane County).

NAMES IN USE

Yellow Cedar (Oreg.).
Sitka Cypress (Oreg., Calif.).
Yellow Cypress (Oreg., Wash.).
Nootka Cypress (Calif. lit.).
Nootka Sound Cypress (cult. Eng.).
Alaska Ground Cypress (Calif. lit.).
Alaska Cypress (Calif. lit.)
Alaska Cedar (trade).
Alaska Yellow Cedar (trade).

VARIETIES DISTINGUISHED IN CULTIVATION

Chamæcyparis nootkatensis viridifolia Sudworth.
Chamæcyparis nootkatensis cinerascens Sudworth.
Chamæcyparis nootkatensis cinerascens genuina Sudworth.
Chamæcyparis nootkatensis cinerascens aureo-discolor Sudworth.
Chamæcyparis nootkatensis argenteovarians Sudworth.
Chamæcyparis nootkatensis aureo-versicolor Sudworth.
Chamæcyparis nootkatensis zanthophylla Sudworth.
Chamæcyparis nootkatensis pendens Sudworth.
Chamæcyparis nootkatensis compacta (Veitch) Beissner.
Chamæcyparis nootkatensis compressa Beissner.
Chamæcyparis nootkatensis nidiformis Beissner.
Chamæcyparis nootkatensis albo-picta Sudworth.
Chamæcyparis nootkatensis aureo-viridis (Hort. Kew.) Sudworth.
Chamæcyparis nootkatensis picta Sudworth.

*Chamæcyparis lawsoniana (A. Murray) Parlatore.

Port Orford Cedar.

RANGE.—Coast region from southwestern Oregon (Coos Bay) to California (Klamath River), extending inland about 40 miles.

NAMES IN USE

Port Orford Cedar (Oreg., Calif., and trade).
Oregon Cedar (Oreg., Calif.).
White Cedar (Oreg., Calif.).
Ginger Pine (Calif.)
Lawson's Cypress (Calif., Oreg.).
Port Orford (White) Cedar (trade).

VARIETIES DISTINGUISHED IN CULTIVATION

Chamæcyparis lawsoniana erecta (Gordon) Sudworth.
Chamæcyparis lawsoniana erecta viridis (Veitch) Beissner.
Chamæcyparis lawsoniana erecta glaucifolia Sudworth.
Chamæcyparis lawsoniana erecta glaucescens Sudworth.
Chamæcyparis lawsoniana pyramidalis leucophylla Sudworth.
Chamæcyparis lawsoniana pyramidalis flaveola Sudworth.
Chamæcyparis lawsoniana pyramidalis luteo-tenuis Sudworth.
Chamæcyparis lawsoniana rosenthali Beissner.
Chamæcyparis lawsoniana worlei Beissner.
Chamæcyparis lawsoniana alumi Beissner.
Chamæcyparis lawsoniana monumentalis nova Beissner.
Chamæcyparis lawsoniana monumentalis albescens Sudworth.
Chamæcyparis lawsoniana fraseri Beissner.
Chamæcyparis lawsoniana robusta Beissner.
Chamæcyparis lawsoniana robusta aurifolia Sudworth.
Chamæcyparis lawsoniana robusta cinerea Sudworth.
Chamæcyparis lawsoniana robusta argentifolia Sudworth.
Chamæcyparis lawsoniana atroviridis Sudworth.
Chamæcyparis lawsoniana cyanea Sudworth.
Chamæcyparis lawsoniana cyanea pendens Sudworth.
Chamæcyparis lawsoniana beissneriana Smith and Cie.
Chamæcyparis lawsoniana nivea Beissner.
Chamæcyparis lawsoniana lutea (Gordon) Beissner.
Chamæcyparis lawsoniana lutea flavescens (Gordon) Sudworth.
Chamæcyparis lawsoniana aurea (Gordon) Beissner.
Chamæcyparis lawsoniana aurea magnifica (Beissner) Sudworth.
Chamæcyparis lawsoniana parva candida Sudworth.
Chamæcyparis lawsoniana parva albovariegata (Gordon) Sudworth.
Chamæcyparis lawsoniana parva albospiciformis Sudworth.
Chamæcyparis lawsoniana parva densa Sudworth.
Chamæcyparis lawsoniana shawi Beissner.
Chamæcyparis lawsoniana minima (Gordon) Sudworth.
Chamæcyparis lawsoniana argentea (Gordon) Beissner.
Chamæcyparis lawsoniana argentea depauperata Sudworth.

Chamæcyparis lawsoniana argentea minuta Sudworth.
Chamæcyparis lawsoniana westermanni Beissner.
Chamæcyparis lawsoniana versicolor Beissner.
Chamæcyparis lawsoniana argenteo-variegata (Veitch) Beissner.
Chamæcyparis lawsoniana argenteo-variegata novicia Sudworth.
Chamæcyparis lawsoniana aureo-variegata (Veitch) Beissner.
Chamæcyparis lawsoniana aureo-spica Beissner.
Chamæcyparis lawsoniana albo-spica Gordon) Beissner.
Chamæcyparis lawsoniana overeynderi Beissner.
Chamæcyparis lawsoniana nutans Sudworth.
Chamæcyparis lawsoniana nutans vera (Beissner) Sudworth.
Chamæcyparis lawsoniana nutans alba (Gordon) Sudworth.
Chamæcyparis lawsoniana filiformis (Veitch) Beissner.
Chamæcyparis lawsoniana filiformis globosa Beissner.
Chamæcyparis lawsoniana intertexta (Veitch) Beissner.
Chamæcyparis lawsoniana gracilis (Gordon) Beissner.
Chamæcyparis lawsoniana gracilis pusilla Sudworth.
Chamæcyparis lawsoniana laxa Beissner.
Chamæcyparis lawsoniana crispa Beissner.
Chamæcyparis lawsoniana casuarinifolia Beissner.
Chamæcyparis lawsoniana tortuosa Beissner.
Chamæcyparis lawsoniana compacta recens Sudworth.
Chamæcyparis lawsoniana fragrans (Gordon) Beissner.
Chamæcyparis lawsoniana fragrans argyropsis Sudworth.
Chamæcyparis lawsoniana fragrans conica Beissner.
Chamæcyparis lawsoniana parva Sudworth.
Chamæcyparis lawsoniana argentea prostrata (Beissner) Sudworth.
Chamæcyparis lawsoniana forstekiana Beissner.
Chamæcyparis lawsoniana weisseana Moeller.
Chamæcyparis lawsoniana silver-queen Beissner.
Chamæcyparis lawsoniana amabilis (Hort. Kew.) Sudworth.
Chamæcyparis lawsoniana bowleri (Hort. Kew.) Sudworth.
Chamæcyparis lawsoniana californica (Hort. Kew.) Sudworth.
Chamæcyparis lawsoniana darleyensis (Hort. Kew.) Sudworth.

JUNIPERUS Linnæus

Juniperus communis Linnæus. Dwarf Juniper.

RANGE.—From Greenland to Alaska and in the East southward to North Carolina and northern Nebraska; in the Rocky Mountains to Texas, New Mexico, and Arizona; in the Pacific region to northern California; also in Old World.

NOTE ON NOMENCLATURE.—Several shrubby varieties are distinguished in the wild state, of which the following are important: *Juniperus communis depressa* Pursh (Newfoundland to New England, Great Lakes and northwestward); *Juniperus communis montana* Aiton (Greenland to New England, and in the eastern mountains to North Carolina and to Nebraska; in the Rocky Mountains from Alberta to the mountains of west Texas and northern Arizona; from Alaska to eastern Washington and Oregon and California Sierras); *Juniperus communis jackii* Rehder (coast region of northern California to Vancouver Island).

NAMES IN USE

Dwarf Juniper (Mich., Wash., Calif.).
Ground Juniper (Oreg., Wash., Idaho).
Scrub Juniper (Colo.).
Juniper (Utah, Wyo., Idaho., Wash., Calif.).
Scent Cedar (Wyo.).
Common Juniper (lit.).

VARIETIES DISTINGUISHED IN CULTIVATION

Juniperus communis cracovia (Koch) Beissner.
Juniperus communis suecica (Miller) London.
Juniperus communis hibernica (Loddiges) Gordon.
Juniperus communis hibernica compressa Carrière.
Juniperus communis oblonga (Bieber) Loudon.
Juniperus communis oblongo-pendula (Loudon) Carrière.
Juniperus communis pendens Sudworth.
Juniperus communis hemisphærica (Presl) Parlatore.
Juniperus communis echinoformis (Knight Beissner.)
Juniperus communis variegata aurea Carrière.
Juniperus communis montana Aitan.
Juniperus communis argyrophylla Sudworth.
Juniperus communis pygmæa (Koch) Sudworth.

Juniperus californica Carrière. **California Juniper.**

RANGE.—Central California (Lower Sacramento River) and southward through California in coast ranges and in Sierra Nevada to Kernville; Tehachapi Mountains, San Bernardino Mountains (foothills), and on west side of the San Jacinto and Cuyamaca Mountains; Lower California.

NAMES IN USE

White Cedar; Juniper (Calif.).
California Juniper (Calif. lit.).
Sweet-fruited Juniper (Calif.).
Sweet-berried Cedar.

***Juniperus utahensis** (Engelmann) Lemmon.[14] **Utah Juniper.**

RANGE.—Desert region from southwestern Idaho, eastern Utah (Wasatch Mountains) to southeastern California, northern Arizona, western New Mexico, western Colorado, and southwestern Wyoming.

NAMES IN USE

Juniper (Utah).
Western Red Cedar.
Desert Juniper (Calif. lit.).
Utah Juniper.
Cedar (Utah, Colo.).
White Cedar (Utah).

Juniperus utahensis megalocarpa Sudworth. **Utah Juniper.**

RANGE.—Southwestern New Mexico (near Alma in the valley of the Sacramento River); Arizona (rim of Grand Canyon, and at Angell, near Flagstaff).

NOTE ON NOMENCLATURE.—Originally described as *Juniperus megalocarpa* Sudworth. It has been designated recently as *Juniperus utahensis* var. *megalancocarpa* Sargent. Discovered by W. R. Mattoon in 1906.

NAMES IN USE

Big-berry Juniper.
Utah Juniper.

***Juniperus pachyphloea** Torrey. **Alligator Juniper.**

RANGE.—Southwestern Texas (Eagle, Chinati, Davis, Chisos, and Limpia Mountains), and westward on desert ranges of New Mexico and Arizona south of Colorado River plateau; mountains of northern and southern Arizona; Mexico.

NAMES IN USE

Juniper (Ariz., N. Mex.).
Oak-barked Cedar (Ariz.).
Alligator Juniper (Ariz.).
Oakbark Juniper (Ariz.).
Mountain Cedar (Tex.).
Thick-barked Juniper (Calif. lit.).
Checkered-barked Juniper (lit.).

[14] *Juniperus Knightii* A. Nelson (in Bot. Gaz., XXV, 198, f. 1, 2, 1898) is described as a "scraggy shrub or small tree" common in the Red Desert region of Wyoming from the Seminole Mountains to the Green River. It is so closely related to *Juniperus utahensis* that it is difficult to separate as a species, and apparently the best way to treat it is to consider it a form of *Juniperus utahensis*.

Juniperus flaccida Schlechtendal. **Drooping Juniper.**

RANGE.—Southwestern Texas (Chisos Mountains); northeastern Mexico.

NAME IN USE

Drooping Juniper

Juniperus occidentalis Hooker. **Western Juniper.**

RANGE.—From western Idaho, eastern Washington, eastern and southern Oregon, on the Cascades and Sierra Nevada to southern California (San Bernardino Mountains).

NAMES IN USE

Juniper (Oreg., Calif., Idaho).
Cedar (Idaho).
Yellow Cedar (Mont.).
Western Cedar (Idaho).
Western Red Cedar.
Western Juniper (Calif. lit.).
Sierra Juniper (Calif.).

***Juniperus monosperma** (Engelmann) Sargent. **One-seed Juniper.**

RANGE.—Eastern base Rocky Mountains of Colorado (Platte and Arkansas Rivers) and southward into western Texas and western Oklahoma; northwestern Arkansas (Benton and Stone Counties—W. W. Ashe); southern Utah and Nevada to central New Mexico and Arizona (Santa Catalina, Santa Rita, Huachuca, Chiricahua, and Rincon Mountains).

NAMES IN USE

One-seeded Juniper.
Naked-seeded Juniper (Calif. lit.).
Cedar (Colo.).
Cherrystone Juniper (lit.).

Juniperus pinchotii Sudworth. **Red-berry Juniper.**

RANGE.—Northwestern Texas (Paloduro Canyon in Randall, Armstrong, and Briscoe Counties, also in Hardeman, Garza, Kimble, Tom Green, Valverde, Menard, and Hood Counties); Arizona (central and southern). There is need of much further investigation to determine the exact range of this species. It is to be looked for in western Oklahoma.—First discovered by George L. Clothier and J. W. Riggs in 1903.

NAMES IN USE

Pinchot Juniper.
Red-berry Juniper.

***Juniperus mexicana** Sprengel. **Mountain Cedar.**

RANGE.—Texas (Brazos County, southward and westward); Mexico.

NOTE ON NOMENCLATURE.—Formerly designated as *Juniperus sabinoides* (Humboldt, Bonpland and Kunth) Sargent.

NAMES IN USE

Juniper Cedar (Tex.).
Mountain Cedar (Tex.).
Juniper.
Mountain Juniper.
Rock Cedar (Tex.).

***Juniperus virginiana** Linnæus. **Eastern Red Cedar.**

RANGE.—Nova Scotia and New Brunswick to Georgia (coast), southern Alabama, and Mississippi; west in Ontario (Georgian Bay) to eastern North and South Dakota, southern Michigan, eastern Nebraska and Kansas, southeastern Oklahoma, southwestern Arkansas, and eastern Texas.

NAMES IN USE

Red Cedar (N. H., Vt., Mass., R. I., N. Y., N. J., Pa., Del., Va., W. Va., N. C., S. C., Ga., Fla., Ala., Miss., La., Ky., Mo., Ill., Ind., Wis., Iowa, Mich., Minn., Ohio, Ont., and hort.).
Cedar (Conn., Pa., N. J., S. C., Ky., Ill., Iowa, Ohio).
Savin (Mass., R. I., N. Y., Pa., Minn.).
Juniper (N. Y., Pa.).
Juniper Bush (Minn.).
Cedre (La.).
Eastern Red Cedar (trade).
Tennessee Red Cedar (trade).

VARIETIES DISTINGUISHED IN CULTIVATION

Juniperus virginiana caroliniana (Marshall) Willdenow.
Juniperus virginiana gracilis (Endlicher) Sargent.
Juniperus virginiana pyramidiformis Sudworth.
Juniperus virginiana pyramidiformis glaucifolia Sudworth.
Juniperus virginiana pyramidiformis viridifolia Sudworth.
Juniperus virginiana nutans Beissner.
Juniperus virginiana interrupta (Wendland) Beissner.
Juniperus virginiana dumosa Carrière.
Juniperus virginiana pumila Gordon.
Juniperus virginiana pumila nivea (Beissner) Sudworth.
Juniperus virginiana schotti Gordon.
Juniperus virginiana tripartita Gordon
Juniperus virginiana tripartita aureo-versicolor Sudworth.
Juniperus virginiana kosteriana Beissner.
Juniperus virginiana glaucescens Sudworth.
Juniperus virginiana cinerascens Carrière.
Juniperus virginiana plumosa alba (Carrière) Beissner.
Juniperus virginiana cannarti (Koch) Beissner.
Juniperus virginiana polymorpha Beissner.
Juniperus virginiana pendula Carrière.
Juniperus virginiana smithi penduliformis Sudworth.
Juniperus virginiana chamberlayni Carrière.
Juniperus virginiana plumosa candida Sudworth.
Juniperus virginiana albo-spica Beissner.
Juniperus virginiana albo-variegata Beissner.
Juniperus virginiana aureo-spica Beissner.
Juniperus virginiana aureo-variegata Veitch.
Juniperus virginiana aurea superba Sudworth.
Juniperus virginiana elegantissima Beissner.
Juniperus virginiana horizontaliformis Sudworth.
Juniperus virginiana triomphe d'angers Beissner.

*Juniperus lucayana Britton. Southern Red Cedar.

RANGE.—Southern Georgia in the coast region to (Indian River) Florida, on the west coast of which it occurs from Charlotte Harbor to the Apalachicola River bottom; eastern Texas (Harris and Milam Counties). Much planted for ornament in the coast country from Florida to western Louisiana, becoming naturalized in some localities. It occurs also in Jamaica, Bahamas, San Domingo, eastern Cuba, and Antigua.

NOTE ON NOMENCLATURE.—Formerly referred to *Juniperus barbadensis* Linnæus.

NAMES IN USE

Southern Red Cedar.
Coast Red Cedar (lit.).

*Juniperus scopulorum Sargent. Rocky Mountain Red Cedar.

RANGE.—From western Texas northward in the Rocky Mountain States to Alberta and westward to the coast of British Columbia, into Washington, eastern Oregon, and Nevada; extending eastward from the Rockies into northwestern Nebraska (Niobrara River, Sheridan County) and to South Dakota (Black Hills).

NAMES IN USE

Rocky Mountain Red Cedar (Wash., Colo., Utah).
Cedar (Colo.).
Red Cedar (Wash., Utah).
Juniper (Idaho).
Colorado Juniper (lit.).

Family TAXACEÆ

TUMION Rafinesque

Tumion taxifolium (Arnott) Greene. **Stinking Cedar.**

RANGE.—Western Florida (east bank of Apalachicola River from River Junction to the vicinity of Bristol, Liberty County); southwestern Georgia (Decatur County); rare and local.

NOTE ON NOMENCLATURE.—Formerly, and still, designated as *Torreya taxifolia* Arnott.

NAMES IN USE

Stinking Cedar (Fla.).
Savin (Fla.).
Torrey-tree (Fla.).
Stinking Savin (Fla.).
Fetid Yew (Eng. lit.).
Florida Torreya (lit.).

Tumion californicum (Torrey) Greene. **California Nutmeg.**

RANGE.—California (in the coast region from Mendocino County to Santa Cruz Mountains in Santa Clara County) and along the west slope of the Sierra Nevada from Eldorado to Tulare County.

NOTE ON NOMENCLATURE.—Formerly, and still, designated as *Torreya californica* Torrey.

NAMES IN USE

California Nutmeg (Calif.).
Stinking Cedar.
Yew (Idaho).
California False Nutmeg (Calif. lit.).
Coast Nutmeg (Calif. lit.).
Nutmeg Tree (Calif.).
California Torreya (Calif.).

TAXUS Linnæus

***Taxus brevifolia** Nuttall. **Pacific Yew.**

RANGE.—Pacific coast region from Alaska (Annette, Gravina, Revillagigedo, and Mary Islands, southeastern Tongass National Forest) and British Columbia (Queen Charlotte Island and Skeena River), and east to Selkirk Mountains; through western Washington and Oregon to California (coast ranges to Monterey Bay and western slopes of Sierra Nevada to Tulare County); mountains of eastern Washington and Oregon to northern Montana (western slopes of Rocky Mountains).

NAMES IN USE

Yew (Calif., Idaho, Oreg.).
Mountain Mahogany (Idaho).
Western Yew (Calif.).
Pacific Yew (Calif. lit.).

Taxus floridana Chapman. **Florida Yew.**

RANGE.—Western Florida (east bank of Apalachicola River, Gadsden County, from Aspalaga to the vicinity of Bristol); very local.

NAMES IN USE

Yew (Fla.).
Savin (Fla.).
Florida Yew.

ANGIOSPERMÆ

MONOCOTYLEDONES

Family PALMAE

THRINAX Swartz

Thrinax floridana Sargent. **Thatch-palm.**

RANGE.—Southern Florida (Keys from Torch Key to Longs Key; and on the peninsula from Romano to Cape Sable).

NOTE ON NOMENCLATURE.—Formerly designated as *Thrinax parviflora* Swartz, a Jamaican species.

NAMES IN USE

Silktop Palmetto (Fla.).
Silver Thatch (Fla.).
Florida Thatch-Palm (lit.)
Bigberry Thatch Palm.
Thatch Palm.

Thrinax microcarpa Sargent. **Silvertop Palmetto.**

RANGE.—Southern Florida (No-Name Key, and Bahia Honda Key); also on Sugar Loaf Sound; Cuba.

NAMES IN USE

Silver-top Palmetto (Fla.).
Prickly Thatch (Fla.).
Brittle Thatch (Fla.).
Brittle Thatch Palm (lit.).

Thrinax keyensis Sargent. **Thatch-palm.**

RANGE.—Southern Florida (North shore of largest of Marquesas Keys and on Crab Key); Bahamas; said also to occur in Porto Rico.

NAMES IN USE

Key Thatch (Fla.).
Littleberry Thatch-palm.
Key Thatch Palm (lit.).
Thatch Palm.

Thrinax wendlandiana Beccari. **Thatch-palm.**

RANGE.—Southern Florida (Madeira Hammock, southern extremety of Dade County), Pumpkin Key in the same county, and at Flamingo, near Cape Sable, Monroe County). It occurs also in Cuba and on Mugueres Island (in the Bay of Honduras).

NOTE ON NOMENCLATURE.—Described in 1907, but not detected in Florida until 1911.

NAMES IN USE

Wendland Thatch-palm.
Thatch-palm.

COCCOTHRINAX Sargent

Coccothrinax jucunda Sargent. **Thatch-palm.**

RANGE.—Southern Florida (Biscayne Bay and on a number of southern keys to the Marquesas Keys); Bahamas.

NOTE ON NOMENCLATURE.—Formerly designated as *Coccothrinax garberi* Sargent and as *Coccothrinax argentea* (Loddiges) Sargent.

NAMES IN USE

Brittle Thatch.
Silver-top Palmetto.
Bay-top Palmetto.
Silver Thatch-palm.
Thatch-palm.

SABAL Adanson

*Sabal palmetto (Walter) Roemer and Schultes. **Cabbage Palmetto.**

RANGE.—Coast region from North Carolina (Smiths Island, Cape Fear River) to Florida (Key Largo) and on the Gulf Coast to Saint Andrews Bay.

NOTE ON NOMENCLATURE.—Designated also as *Inodes palmetto* (Walter) Cook.

NAMES IN USE

Cabbage Palmetto (N. C., S. C.).
Banks Palmetto (N. C.).
Palmetto (N. C., S. C.).
Cabbage-tree (Miss., Fla.).
Tree Palmetto (La.).
Swamp-cabbage (Fla.).
"Chaw-fo-ka-naw" (Seminole Indian).
Carolina Palmetto (lit.).

Sabal texana Beccari. **Texas Palmetto.**

RANGE.—Southern Texas (Rio Grande from near Edinburg) nearly to the Gulf of Mexico and southward into Mexico.

NOTE ON NOMENCLATURE.—Formerly designated as *Sabal mexicana* S. Watson, not of Martins, and as *Inodes texana* O. F. Cook.

NAMES IN USE

Texas Palm (lit.).
Mexican Palmetto (lit.).
Texas Palmetto.

WASHINGTONIA H. Wendland

Washingtonia filamentosa (Wendland) Kuntze. **California Palm.**

RANGE.—Southern California (Colorado Desert in canyons of the San Bernardino and San Jacinto Mountains); Lower California.

NOTE ON NOMENCLATURE.—Formerly designated as *Neowashingtonia filimentosa* (Wendland) Sudworth; maintained by some as *Neowashingtonia robusta* (Wendland) Britton.

NAMES IN USE

Fan-leaf Palm (Calif.).
California Fan-palm (Calif.).
Wild Date (Calif.).
Washington Palm (Calif.).
Desert Palm.
Fan Palm (Calif.).
San Diego Palm (Calif.).
Desert Date (Calif.).
California Washington Palm (lit. and hort.).
California Palm.

ACOELORRAPHE H. Wendland

Acoelorraphe wrightii (Grisebach and Wendland) Beccari.

RANGE.—Southwestern Florida (Dade County). Also in Cuba and the Bahamas (Sargent).

NOTE ON NOMENCLATURE.—Formerly designated by American authors as *Paurotis androsana* O. F. Cook, and as *Paurotis wrightii* (Grisebach and Wendland) Britton.

NAME IN USE

Saw Cabbage Palm.

Acoelorraphe arborescens (Sargent) Beccari.

RANGE.—Southwestern Florida (Hammocks near the Chokoloskee River and at the head of East River, White Water Bay—Sargent).

NOTE ON NOMENCLATURE.—Formerly designated as *Serenoa arborescens* Sargent, and as *Paurotis wrightii* Britton and Shafer (in part).

ROYSTONEA O. F. Cook

Roystonea regia (Humboldt, Bonpland, and Kunth) Cook. **Royal Palm.**

RANGE.—Florida (on Rogers River, 20 miles east of Caximbas Bay, Longs Key, Biscayne Bay, near mouth of Little River); West Indies, and Central America.

NOTE ON NOMENCLATURE.—Formerly designated as *Oreodoxa regia* Humboldt, Bonpland and Kunth.

NAME IN USE

Royal Palm (Fla.)

PSEUDOPHOENIX H. Wendland

Pseudophoenix vinifera Beccari. **Hog Cabbage Palm.**

RANGE.—Southern Florida Keys (Elliotts Key and Key Largo); Bahamas; Cuba.

NOTE ON NOMENCLATURE.—Formerly designated as *Pseudophoenix sargentii* Wendland.

NAMES IN USE

Florida Palm (Fla.).
Sargent's Palm (lit.).
Hog Cabbage Palm.
Mountain Cabbage (Bahamas).
Hog Palm (Bahamas).
Palma Guaney (Cuba).

COCOS Linnæus

Cocos nucifera Linnæus. **Coconut.**

RANGE.—Widely distributed by cultivation throughout tropical parts of the Old and New World. Its native range is not known, but it is possibly in tropical America. It grows spontaneously in all the West Indian Islands and in Southern Florida.

NAME IN USE

Coconut

Family LILIACEÆ

YUCCA Linnæus

Yucca aloifolia Linnæus. **Spanish Bayonet.**

RANGE.—Coast of North Carolina to Florida and Gulf Coast to eastern Louisiana; occasionally extending inland 25 or 30 miles; Yucatan.

NAMES IN USE

Spanish Bayonet.
Aloe-leaf Yucca (lit.).
Spanish Dagger.

Yucca gloriosa Linnæus. **Spanish Dagger.**

RANGE.—Coast of North Carolina to Florida.

NAMES IN USE

Spanish Dagger.
Spanish Bayonet.
Moundlily Yucca (lit.).

VARIETIES DISTINGUISHED IN CULTIVATION

Yucca gloriosa plicata Carrière. Yucca gloriosa recurrifolia Engelmann.

Yucca treculeana Carrière. Spanish Bayonet.

RANGE.—Texas (Matagorda Bay) and southward into Mexico (Sierra Madre, Nuevo Leon), and along the Rio Grande to the mountains of western Texas.

NAMES IN USE

Spanish Bayonet (Tex.). Texas Spanish Bayonet.
Spanish Dagger.

Yucca torreyi Shafer.[15] Spanish Bayonet.

RANGE.—Western Texas (desert plateau) to eastern Arizona; Mexico (Chihuahua).

NOTE ON NOMENCLATURE.—Formerly designated as *Yucca macrocarpa* (Torrey) Coville, some authors still maintaining this name.

NAMES IN USE

Broad-fruit Yucca (lit.). Palma Criolla.
Spanish Dagger. Amole.
Palmo. Torrey Yucca.
Spanish Bayonet.

Yucca mohavensis Sargent. Mohave Yucca.

RANGE.—From northwestern Arizona and southern Nevada into California (over the Mohave Desert to the coast, in Monterey County); northward to Monterey Bay; southward to northern Lower California.

NAMES IN USE

Spanish Dagger. Tree Yucca.
Spanish Bayonet. Mohave Yucca (lit.).

Yucca schottii Engelmann. Spanish Bayonet.

RANGE.—Southern Arizona (slopes of Santa Catalina, Santa Rita, and Rincon Mountains); Mexico (Sonora).

NOTE ON NOMENCLATURE.—Formerly designated as *Yucca macrocarpa* Engelmann.

NAMES IN USE

Spanish Dagger (Ariz.). Spanish Bayonet.
Schott Yucca.

Yucca faxoniana Sargent.[16] Spanish Bayonet.

RANGE.—Southwestern Texas (desert plateau).

NOTE ON NOMENCLATURE.—Formerly designated as *Yucca macrocarpa* Sargent not Engelmann, nor Coville.

NAMES IN USE

Spanish Dagger (Tex.). Faxon Yucca.
Sierra Blanca Yucca (lit.). Spanish Bayonet.

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[15] Britton and Shafer (North American Trees, 157, 1908) have taken up this name in place of *Yucca macrocarpa* (Torrey) Coville, and the change appears to be necessary. *Yucca macrocarpa* Coville (1893), based on *Yucca baccata* var. *macrocarpa* Torrey (1858), is antedated by *Yucca macrocarpa* Engelmann (1881), which was applied to another species. The Torrey Yucca was, therefore, without a tenable name when it was renamed *Yucca torreyi* Shafer (1908).

[16] Dr. Trelease (Missouri Bot. Gard. Rept. 1902, 116) has created for this plant the genus *Samuela*, designating the species as *Samuela Faxoniana* Trelease. Britton and Shafer (North American Trees, 159, 1908) have followed Dr. Trelease in maintaining this name, the common name given to it being Sierra Blanca Yucca.

Yucca brevifolia Engelmann.[17] **Joshua-tree.**

RANGE.—Southwestern Utah to California (to the western and northern borders of the Mohave Desert.)

NOTE ON NOMENCLATURE.—Formerly designated as *Yucca arborescens* (Torrey) Trelease; at present also as *Clistoyucca brevifolia* (Engelmann) Rydberg.

NAMES IN USE

Tree Yucca (Calif.).
Yucca Cactus (Calif.).
The Joshua (Utah).
Joshua-tree (Utah, Ariz., N. Mex.).
Joshua Yucca.

Yucca elata Engelmann.[18] **Soapweed.**

RANGE.—Southwestern Texas to southern Arizona; northern Mexico.

NOTE ON NOMENCLATURE.—Formerly designated as *Yucca constricta* Buckley, and as *Yucca radiosa* (Engelmann) Trelease.

NAMES IN USE

Spanish Bayonet and Spanish Dagger. (Tex., N. Mex., and Ariz.).
Sotol (Ariz.).
Southern Yucca.
Soapweed.

DICOTYLEDONES

Family CASUARINACEÆ

CASUARINA Forster

Casuarina equisetifolia Forster. **Beefwood.**

RANGE.—Native of tropical Asia and Australia. Naturalized in southern Florida and Keys; also in the West Indies.

NAMES IN USE

Beefwood.
Ironwood.
Polynesian Ironwood.
She Oak.
Swamp Oak, Australian Oak.
Australian Pine.
Horsetail-tree.
Horsetail Beefwood (hort.).

Family JUGLANDACEÆ

JUGLANS Linnæus

***Juglans cinerea** Linnæus. **Butternut.**

RANGE.—Southern New Brunswick to Delaware and on the Appalachian Mountains to Georgia and Alabama (headwaters of Black Warrior River, Winston County); westward through Ontario and upper peninsula of Michigan to eastern South Dakota, eastern Iowa, southeastern Nebraska, central Kansas, southern Missouri, and northern Arkansas.

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[17] Trelease (Missouri Botanical Report 1902, 41) proposes for this tree the genus *Clistoyucca*, designating the Joshua-tree as *Clistoyucca arborescens* (Torrey) Trelease. Britton and Shafer (North American Trees, 150, 1908) have followed Trelease in maintaining this name.

[18] Britton and Shafer (Opus cit., 152) have taken up for this species *Yucca elata* Engelmann (1882), which is based on *Yucca angustifolia β elata* Engelmann (1873), while C. S. Sargent (Manual Trees of North America, 124, 1905, ed. I) maintained for this plant *Yucca radiosa* Trelease, which is based on *Yucca angustifolia β radiosa* Engelmann (1871). The latter trinomial is the oldest combination applied to this yucca, and were it not for a rule of nomenclature now observed the binomial *Yucca radiosa* (Engelmann) Trelease (1892), derived from it, would be the oldest and therefore preferable name. Under the circumstances, however, *Yucca elata* Engelmann (1882) should be maintained. Sargent (Op. cit. ed. 2, 117, 1922) has taken up the latter name for this plant.

NAMES IN USE

Butternut (Me., N. H., Vt., Mass., R. I., Conn., N. Y., N. J., Pa., Del., W. Va., N. C., S. C., Ala., Ark., Ky., Tenn., Mo., Ill., Iowa, Ind., Mich., Minn., Wis., Kans., Nebr., Ohio, Ont.).
White Walnut (Del., Pa., Tenn., Va., W. Va., N. C., S. C., Ala., Ky., Mo., Ill., Ind., Wis., Iowa, Nebr., Minn., S. Dak.).
Walnut (Minn.).
Oil Nut (Me., Minn., N. H., S. C.).
Buttnut (N. J.).
Lemon Walnut (lit.).
American White Walnut (trade).

× Juglans quadrangulata Rehder. **Hybrid.**

RANGE.—Eastern Massachusetts.

NOTE ON NOMENCLATURE.—Believed to be a hybrid between *Juglans regia* and *Juglans cinerea* Linnæus (cult.).

× Juglans sargentii Sudworth. **Hybrid.**

RANGE.—Eastern United States (cult.).

NOTE ON NOMENCLATURE.—Believed to be a hybrid between *Juglans cinerea* Linnæus and *Juglans sieboldiana* Maximowitz.

*Juglans nigra Linnæus. **Black Walnut.**

RANGE.—Southern Ontario to Florida, central Alabama, and Mississippi, and westward through southern Michigan, Wisconsin, and Minnesota to central and northern Nebraska, eastern Kansas, Arkansas, and Oaklahoma (Rich Mountain), and eastern Texas (San Antonio Rver).

NAMES IN USE

Black Walnut (N. H., Vt., Mass., R. I., Conn., N. Y., N. J., Del., Pa., Va., W. Va., N. C., Tenn., Ga., Fla., Ala., Miss., Tex., La., Ark., Ky., Mo., Ind., Ill., Kans., Nebr., Iowa, Mich., Ohio, Ont., S. Dak., Minn.).
American Black Walnut (trade).
Walnut (N. Y., Del., W. Va., Fla., Ky., Tenn., Mo., Ohio, Ind., Iowa).
Walnut-tree (Pa., S. C.).
Dent-soo-kwa-no-ne (=Round Nut, N. Y. Indians).
Gun-wood (trade).
American Walnut (trade).

× Juglans intermedia Carrière. **Hybrid.**

RANGE.—Eastern United States (cult.). A very large tree of this hybrid (between *Juglans nigra* Linnæus and *Juglans regia* Linnæus) has been found in southeastern Virginia (banks of the James River).

NOTE ON NOMENCLATURE.—Two other technically unnamed hybrid walnut trees produced by Luther Burbank are the "Royal," a cross between *Juglans nigra* and *Juglans hindsii* (Jepson) Rehder, and the "Paradox," which is a hybrid between a form of *Juglans californica* S. Watson and *Juglans regia* Linnæus.

Juglans rupestris Engelmann.[19] **Little Walnut.**

RANGE.—Central, southern, and western Texas (Colorado, Llano, and Guadaloupe Rivers); western Oklahoma; southeastern New Mexico.

NAMES IN USE

Western Walnut (Tex.).
Dwarf Walnut (Tex.).
Little Walnut (Tex.).
Walnut (N. Mex.).
Mexican Walnut.
Texas Walnut (lit.).

[19] Two rather distinct forms of this species exist; one, the eastern form, is characterized in general by its small narrow leaflets and very small nuts; the other, the western form, has larger and broader leaflets and very much larger nuts. Other less conspicuous distinctions are available. But in the central part of the tree's range (western Texas and New Mexico), where the two forms occur together, there are many intermediate forms, indicating that the extreme eastern and western forms gradually become merged. Britton and Shafer (North American Trees, 221, 1908) have taken up for the western form of *Juglans rupestris, Juglans major* (Torrey) Heller (Muhlenbergia, I, 50, 1900), this name being based on *Juglans rupestris* var. *major* Torrey (1853), a name which the writer prefers to maintain.

Juglans rupestris major Torrey. **Nogal.**

RANGE.—Texas (Tarrant County); southern New Mexico and Arizona; also in central Arizona (Oak Creek—30 miles south of Flagstaff).

NAME IN USE

Nogal

Juglans californica S. Watson.[20] **California Walnut.**

RANGE.—Southern California coast region (from Santa Barbara to the San Bernardino Mountains).

NAMES IN USE

Walnut (Calif.).
California Walnut (Calif.).
California Black Walnut (lit.).

Juglans hindsii (Jepson) Rehder. **Hinds Walnut.**

RANGE.—Central California coast region.

NOTE ON NOMENCLATURE.—Formerly designated in part, as *Juglans californica* S. Watson, and recently as *Juglans californica* var. *Hindsii* Jepson. In raising the third term of the latter trinomial to specific rank the author of the resulting binomial (*Juglans Hindsii*) would seem to have violated a rule of the International Code of Nomenclature. The spirit of the American Code would, however, permit doing this.

NAME IN USE

Hinds Walnut

HICORIA Rafinesque

* **Hicoria pecan** (Marshall) Britton. **Pecan.**

RANGE.—Iowa (Mississippi River, in Muscatine and Clinton Counties) through southern Illinois and Indiana, western Kentucky and Tennessee to central Alabama and Mississippi, through Missouri and Arkansas to southeastern Arkansas, Oklahoma, western Louisiana and central Texas (Devil's River); Mexico. Considerably extended by cultivation.

NOTE ON NOMENCLATURE.—Formerly designated as *Carya olivæformis* Nuttall, and by some authors now as *Carya pecan* Engler and Graebner.

NAMES IN USE

Pecan (Va., N. C., S. C., Tenn., Ga. (cult.), Ala., Miss., Tex., La., Ark., Mo., Ill., Ind., Iowa., Kans.).
Pecan Nut (La.).
Pecanier (La.).
Pecan-tree (La.).

× **Hicoria nussbaumerii** (Sargent) Sudworth. **Nussbaumer Hickory (Hybrid).**

RANGE.—Originally found in the bottom between Mascoutah and Fayetteville, St. Clair County, Illinois. A tree grown from seed obtained from Illinois, probably of the same parentage, and cultivated at Cedar Rapids, Iowa, has been called the "Floyd Nut." Grafted plants from a tree found at Mount Vernon, Posey County, Indiana, and bearing a similar nut, were later distributed from Washington, Georgia, as the "McCallister." Another of these trees was detected in the neighborhood of Burlington, Iowa, and also one, known as the "Rockville nut," from near Rockville, Mo.

NOTE ON NOMENCLATURE.—Believed to be a hybrid between *Hicoria pecan* (Marshall) Britton and *Hicoria laciniosa* (Michaux f.) Sargent.

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[20] The name *Juglans californica* S. Watson was previously made to include two distinct trees, one of which grows in the southern California coast region and the other in the Central coast region. Prof. W. L. Jepson first pointed out (Bull. So. Calif. Acad. Sci., Vol. 7, p. 23, 1908) that the more northern tree is varietally distinct from the southern tree and designated it as *Juglans californica* var. *Hindsii*. It seems to the writer, however, that this walnut is specifically distinct.

NAME IN USE

Nussbaumer Hickory

× **Hicoria brownii** (Sargent) Ashe. **Browns Hickory (Hybrid).**

RANGE.—Bottomlands of the Arkansas River below Van Buren, Crawford County, Arkansas.

NOTE ON NOMENCLATURE.—Believed to be a hybrid between *Hicoria pecan* Marshall) Britton and *Hicoria cordiformis* (Wangenheim) Britton.

NAME IN USE

Browns Hickory

× **Hicoria brownii varians** (Sargent) Ashe. **(Hybrid).**

RANGE.—A single tree, now known, is growing on Sears Creek, Crawford County, Arkansas.

NOTE ON NOMENCLATURE.—Believed to be a hybrid between *Hicoria pecan* (Marshall) Britton and *Hicoria cordiformis* (Wangenheim) Britton.

Hicoria texana (Le Conte) Britton. **Bitter Pecan.**

RANGE.—Eastern Texas (extending inland from the Gulf for about 150 miles) to southeastern Louisiana; southwestern Mississippi (Adams County); Arkansas (Arkansas River in Crawford and Arkansas Counties).

NAME IN USE

Bitter Pecan

***Hicoria cordiformis** (Wangenheim) Britton. **Bitternut Hickory.**

RANGE—Quebec and Ontario to southern Maine and southward to northwestern Florida and Alabama (Dallas County); west through southern Michigan and northern Minnesota, southeastern Nebraska, eastern Kansas, Arkansas, and Oklahoma (Rich Mountain) and eastern Texas.

NOTE ON NOMENCLATURE.—Formerly designated as *Carya amara* Nuttall and as *Hicoria minima* (Marshall) Britton.

NAMES IN USE

Bitternut (N. H., Mass., R. I., N. Y., N. J., Pa., Del., Va., W. Va., N. C., S. C., Fla., Ala., Miss., La., Tex., Ark., Mo., Ill., Kans., Nebr., Mich., Minn., Ohio, Ontario).
Swamp Hickory (Del., Pa., N. C., S. C., Miss., Tex., Ark., Iowa, Minn.).
Pig Hickory (Ill.).
Pignut (N. Y., W. Va., Mo., Ill., Iowa, Kans.).
Bitter Pecan Tree, Pecanier Amer.
Pecanier Sauvage (La.).
Bitter Pig Nut (N. Y., N. J.).
Hickory (Nebr., trade).
Bitter Hickory (N. H.).
Pig Walnut (N. H.).
Bitter Walnut (Vt.).
Noyer Dur (Quebec).
White Hickory (Tex.).
Highland Hickory (N. C.).
Red-heart Hickory (N. C.).
Bitternut Hickory.

Hicoria cordiformis latifolia (Sargent) Ashe. **Bitternut Hickory.**

RANGE—Arkansas and southeastern Oklahoma (Rich Mountain), Missouri, Iowa, and Ohio.

NAMES IN USE

Broadleaf Bitternut Hickory.
Bitternut Hickory.

***Hicoria cordiformis elongata** Ashe. **Bitternut Hickory.**

RANGE.—West Virginia and North Carolina (mountains); District of Columbia.
NOTE ON NOMENCLATURE.—Originally designated as *Carya cordiformis elongata* Ashe.

NAME IN USE

Bitternut Hickory

× Hicoria laneyi (Sargent) Sudworth. **Laney Hickory (Hybrid).**

RANGE.—A single tree, now known, stands in the Riverside Cemetery, Rochester, N. Y. A tree growing at Millersville, Lancaster County, Pennsylvania, is supposed to be of the same parentage (Sargent).
NOTE ON NOMENCLATURE.—Believed to be a hydrid between *Hicoria cordiformis* (Wangenheim) Britton and *Hicoria ovata* (Miller) Britton.

NAME IN USE

Laney Hickory

× Hicoria laneyi chateaugayensis (Sargent) Sudworth. **(Hybrid).**

RANGE.—Near the mouth of the Chateaugay River, Quebec, and at Summertown, Ontario.
NOTE ON NOMENCLATURE.—Believed to be a hybrid of the same parentage as the preceding form.

Hicoria myristicæformis (Michaux f.) Britton. **Nutmeg Hickory.**

RANGE.—Coast region of South Carolina; central Alabama (between Tombigbee and Alabama Rivers, from Demopolis to Gallion); central Mississippi and western Louisiana; southern Arkansas (Pine Bluff to Arkansas City, and in Red River bottoms about Fulton); southeastern Oklahoma; eastern Texas (Beaumont County); Mexico. Often cultivated in the Middle Atlantic region.
NOTE ON NOMENCLATURE.—Formerly designated as *Carya myristicæformis* Nuttall.

NAMES IN USE

Nutmeg Hickory (S. C., Ala.).
Bitter Water Hickory (Miss.).
Bitter Waternut (La.).
Swamp Hickory (Ark.).
Blasted Pecan (Ark.).

Hicoria aquatica (Michaux f.) Britton. **Water Hickory.**

RANGE.—Coast region from southeastern Virginia to Florida (Indian and Suwanee Rivers), and in the Gulf Coast region to Texas (Brazos River), extending northward in western Louisiana and southwestern Arkansas and to southeastern Missouri; also northeastern Louisiana to western Mississippi and southern Illinois (Wabash River).
NOTE ON NOMENCLATURE.—Formerly designated as *Carya aquatica* Nuttall.

NAMES IN USE

Water Hickory (N. C., Fla., Ala., Miss., La., Tex.).
Swamp Hickory (S. C., Fla., Miss., La.).
Bitter Pecan (Miss., La., Tex.).
Water Bitternut (S. C.).
Lowground Hickory (N. C.).
Lowland Hickory (N. C.).
Pignut Hickory (N. C.).

Hicoria aquatica australis (Sargent) Sudworth. **Water Hickory.**

RANGE.—Florida (Alva, Lee County; Caloosahatchee River, vicinity of Alva and Labelle; St. Johns River in Putnam County; Palm Beach County); eastern Texas (Harrison County). Range imperfectly known at present.

NAMES IN USE

Narrowleaf Water Hickory.
Water Hickory.

***Hicoria ovata** (Miller) Britton. **Shagbark Hickory.**

RANGE.—Southern Maine and Quebec (near Montreal) to Delaware and along the Appalachian Mountains to western Florida, northern Alabama, and Mississippi; west through southern Michigan to southeastern Minnesota, central Wisconsin, eastern Iowa, southeastern Nebraska, eastern Kansas and Oklahoma; also in southwestern Arkansas, northern Alabama and Mississippi and eastern Texas.

NOTE ON NOMENCLATURE.—Formerly designated as *Carya alba* Nuttall.

NAMES IN USE

Shellbark Hickory (Vt., N. H., Mass., R. I., N. Y., Pa., Del., Va., W. Va., N. C., S. C., Ga., Ala., Miss., La., Tex., Ark., Ky., Mo., Ind., Ill., Wis., Iowa., Kans., Nebr., Ohio, Ontario, Mich.).
Shagbark Hickory (Vt., N. H., Mass., R. I., Conn., N. Y., N. J., Pa., Del., S. C., Ala., Miss., Tex., Ark., Mo., Ill., Wis., Mich., Minn., Kans., Nebr., Iowa).
Shellbark (R. I., N. Y., Pa., N. C.).
Upland Hickory (Ill.).
Hickory (Vt., Ohio, trade.)
Scalybark Hickory (W. Va., Ky., S. C., Ala.).
Shagbark (R. I., Ohio).
Shellbark-tree (Del.).
White Walnut (N. J.).
Walnut (Vt., N. Y.).
White Hickory (Iowa, Ark.).
Shagbark Walnut (Vt.).
Sweet Walnut (Vt.).
Redheart Hickory (Miss.).
"Tuscatine" (northern N. J.).

Hicoria ovata ellipsoidalis (Sargent) Ashe. **Shagbark Hickory.**

RANGE.—Northern New York (Monroe County) and Northeastern Missouri (vicinity of Hannibal and Oakwood, Marion County). Range very imperfectly known at present. Probably to be looked for elsewhere in Northern States.

NAME IN USE

Shagbark Hickory

Hicoria ovata complanata (Sargent) Ashe. **Shagbark Hickory.**

RANGE.—Only a single tree now known near Mount Hope, Holmes County, Ohio (Sargent).

NAME IN USE

Shagbark Hickory

Hicoria ovata fraxinifolia (Sargent) Sudworth. **Narrowleaf Shagbark.**

RANGE.—Western New York (Monroe County); Ontario (vicinity of Kingston); Iowa (Keosauqua, Van Buren County); and Oklahoma (vicinity of Myers, Osage County).

NAME IN USE

Narrowleaf Shagbark

Hicoria ovata pubescens (Sargent) Sudworth. **Shagbark Hickory.**

RANGE.—South Carolina (vicinity of Calhoun Falls, Savannah River, Abbeville County); Tennessee (Chattanooga Creek, Hamilton County); Alabama (Valley Head, Dekalb County); Georgia (Little River, Walker County); Mississippi (Columbus, Lowndes County, and at Starkville, Oktibbeha County, and Brookville, Noxubee County.—Sargent).

NAME IN USE

Shagbark Hickory

Hicoria ovata nuttallii (Sargent) Sudworth.[21]
Littlenut Shagbark Hickory.

RANGE.—Eastern Massachusetts, eastern Pennsylvania, western New York; Missouri (near Allenton—Sargent) and southern Michigan (near Ann Arbor—Sudworth); western Maryland (Montgomery County).

NOTE ON NOMENCLATURE.—Formerly designated as *Hicoria microcarpa* (Nuttall) Britton, and as *Carya microcarpa* Nuttall.

NAMES IN USE

Hickory (N. C.).
Small Pignut Hickory (lit.).
Small Pignut (Md.).
Little Pignut (Md.).
Little Shagbark (Md.).
Littlenut Shagbark.
Littlenut Shagbark Hickory.

Hicoria carolinae-septentrionalis Ashe.
Southern Shagbark Hickory.

RANGE.—Central and western North Carolina, South Carolina (Calhoun Falls, Abbeville County), and eastern Tennessee to northern Georgia, central Alabama, and eastern Mississippi.

NAMES IN USE

Shagbark Hickory.
Southern Shellbark (lit.).
Scaly-bark Hickory (N. C.).
Hickory (N. C.).
Southern Shagbark Hickory.

Hicoria carolinae-septentrionalis australis Ashe.
Southern Shagbark Hickory.

RANGE.—North Carolina (coastal plain south of Sampson County) to central Alabama (vicinity of Montgomery).

NOTE ON NOMENCLATURE.—Formerly designated as *Hicoria australis* Ashe.

***Hicoria laciniosa** (Michaux f.) Sargent.
Bigleaf Shagbark Hickory.

RANGE.—Western and central New York and southern Ontario to Ohio (southern), southern Michigan, Indiana, Illinois, southeastern Iowa and Nebraska, Missouri, Kansas, Arkansas, eastern Oklahoma; southward in eastern Pennsylvania to western West Virginia; southeastern Tennessee; Alabama (Dallas County on Alabama River); Louisiana (West Feliciana Parish).

NAMES IN USE

Big Shellbark (Pa., W. Va., Ky., Mo., Ill., Kans.).
Bottom Shellbark (Ill.).
Western Shellbark, Shellbark (Ky.).
Thick Shellbark (S. C., Tenn., Ind.).
Thick Shellbark Hickory (N. C., Ark.).
King Nut (Tenn.).
Ridge Hickory (Mo.).
Shellbark Hickory (Mo. Ontario,).
Big Shagbark (lit.).
Hickory (trade).
Bigleaf Shagbark Hickory.

×Hicoria dunbarii (Sargent) Sudworth. **Dunbar Hickory (Hybrid).**

RANGE.—Northwestern New York (a number of trees growing in bottom lands on the Genessee River at Golah, Monroe County, and at Mount Morris, Livingston County).

NOTE ON NOMENCLATURE.—Believed to be a hybrid between *Hicoria laciniosa* (Michaux f.) Sargent, and *Hicoria ovata* (Miller) Britton.

NAME IN USE

Dunbar Hickory

[21] This varietal form of the Shagbark was originally described as *Carya microcarpa* Nuttall (1842), this not being the same tree as *Carya microcarpa* Nuttall (1818), which is now considered a form of *Carya ovalis* (Wangenheim) Sargent. *Hicoria ovata nuttallii* was, therefore, without a name until Prof. C. S. Sargent gave it its present varietal standing.

†Hicoria alba (Linnæus) Britton. **Mockernut Hickory.**

RANGE.—Southwestern Ontario to Florida (Lake County), and west to southeastern Iowa, Missouri, eastern Oklahoma, and southwestern Arkansas (Rich Mountain; Hempstead and Miller Counties), and in the Gulf States to eastern Texas (Brazos River).

NOTE ON NOMENCLATURE.—Formerly designated as *Carya tomentosa* Nuttall.

NAMES IN USE

Mocker Nut (Mass., R. I., N. Y., N. J., Del., Ala., Miss., La., Tex., Ark., Ill., Iowa, Kans., and hort.).
Whiteheart Hickory (R. I., N. Y., Pa., Del., N. C., Tex., Ill., Iowa, Kans., Minn., Nebr., Ontario).
Bullnut (N. Y., Fla., Miss., Tex., Mo., Ohio, Ill.).
Black Hickory (Tex., Miss., La., Mo.).
Big-bud, Red Hickory (Fla.).
Hickory (Ala., Tex., Pa., S. C., Nebr.).
Hardbark Hickory (Ill.).
Common Hickory (N. C.).
White Hickory (Pa., S. C.).
Hickory Nut (Ky.).
Big Hickory Nut (W. Va.).
Hog Nut (Del.).
Hickory (trade).
Mockernut Hickory.

Hicoria alba subcoriacea (Sargent) Sudworth. **Mockernut Hickory.**

RANGE.—Virginia to Florida and westward in the Gulf States to eastern Texas; northward through Arkansas to Missouri. It occurs also in southwest Indiana (Posey County).[22]

NAME IN USE

Mockernut Hickory

Hicoria alba ficoides (Sargent) Sudworth.

RANGE.—Southwestern Missouri; southeastern Oklahoma, and southwestern Arkansas (Rich Mountain). Range imperfectly known at present.

×Hicoria schneckii (Sargent) Sudworth.
Schneck Hickory (Hybrid).

RANGE.—Single trees found in the vicinity of Lawrenceville, Illinois, and near Muscatine, Iowa.

NOTE ON NOMENCLATURE.—Believed to be a hybrid between *Hicoria alba* (Linnæus) Britton and *Hicoria pecan* (Marshall) Britton.

NAME IN USE

Schneck Hickory

Hicoria leiodermis (Sargent) Sudworth. **Pignut Hickory.**

RANGE.—Arkansas (Hempstead County); Louisiana (Caddo, Calcasieu, Natchitoches, Winn, and Tangipahoa Parishes); and Mississippi (Yazoo County).

NAME IN USE

Pignut Hickory

Hicoria leiodermis callicoma (Sargent) Sudworth.
Pignut Hickory.

RANGE.—Mississippi (Vicksburg, Warren County; vicinity of Natchez, Adams County; Jackson, Hinds County; Taylor, Lafayette County; Rockport, Copiah County; Columbus, Lowndes County; Starkville, Oktibbeha County); western Louisiana (Calcasieu Parish); Texas (vicinity of Beaumont, Jefferson County).

NAME IN USE

Pignut Hickory

[22] C. C. Deam, fide, C. S. Sargent.

Hicoria mollissima Ashe.

RANGE.—Texas (Sabine County, four miles east of Hemphill); Louisiana (Winn Parish); Mississippi (Tishomingo County, along Yellow Creek).

Hicoria pallida Ashe. **Pignut Hickory.**

RANGE.—New Jersey (vicinity of Cape May), southern Delaware, southern Maryland, southeastern Virginia (James City, Gloucester, and Isle of Wight Counties), and southward to Florida (Leon and Gadsden Counties), and Alabama (central and southwestern sections); westward it occurs in southern Tennessee (vicinity of Chattanooga), west-central Mississippi (Yazoo River), and northeastern Louisiana (Tangipahoa Parish).

NOTE ON NOMENCLATURE.—Formerly designated as "*Hicoria villosa* (Sargent) Ashe."

NAMES IN USE

Paleleaf Hickory. Pignut Hickory.

***Hicoria glabra** (Miller) Sweet. **Pignut Hickory.**

RANGE.—Southwestern Vermont and southeastern Ontario to eastern Virginia and in the mountains to North Carolina and Georgia; west through southern Michigan to southern Indiana and Illinois, northern Alabama and eastern Mississippi.

NOTE ON NOMENCLATURE.—Formerly designated as *Carya porcina* Nuttall.

NAMES IN USE

Pignut (N. H., Vt., Mass., Conn., R. I., N. Y., N. J., Pa., Del., W. Va., N. C., S. C., Fla., Ala., Miss., La., Tex., Ark., Ky., Mo., Ill., Ind., Ohio, Ontario, and hort.).
Bitternut.
Black Hickory (Miss., Ind.).
Broom Hickory.
Brown Hickory (Del., Miss., Tenn.).
Hard-shell (W. Va.).
Red Hickory (Del.).
Switch-bud Hickory (Ala.).
White Hickory (N. H.).
Hickory (trade).
Pignut Hickory.

Hicoria glabra megacarpa (Sargent) Sudworth.[23] **Pignut Hickory.**

RANGE.—New York (valley of Genesse River in Seneca Park below Rochester; Pinnacle Range (Rochester and at Ithaca); southern Ohio and Indiana to Illinois (Tunnel Hill, Johnson County); New Jersey; District of Columbia to Florida (Indian and Caloosahatchee Rivers); west in the Gulf region to western Louisiana.

NOTE ON NOMENCLATURE.—Formerly designated as *Carya glabra* var. *megacarpa* Sargent, *Carya megacarpa* Sargent, and as *Carya ovalis megacarpa* Ashe. It is probable that the latter designation is correct.

NAME IN USE

Pignut Hickory

Hicoria ashei Sudworth.

RANGE.—Florida (Hammocks northward from Everglades); also in the coastal regions of Georgia and Alabama.

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[23] C. S. Sargent (Bot. Gaz., LXVI, 244, 1918) defines a form of this variety as *Carya glabra* var. *megacarpa* f. *angulata*, which occurs in southeastern Georgia (vicinity of Brunswick, Glynn County).

Hicoria glabra similis Ashe, formerly designated as *Hicoria similis* Ashe, seems to be varietally distinct because of its usually seven leaflets and its large fruit with relatively thick husks. It occurs from southeastern Georgia and northeastern South Carolina to Alabama (west of Petrey, Crenshaw County).

*Hicoria ovalis (Wangenheim) Sudworth.[24]

RANGE.—Western New York, eastern Pennsylvania, and the District of Columbia to southern Illinois and central Iowa (Story County); southward to western North Carolina and eastern Tennessee and to central Georgia and Alabama.

NAME IN USE

Hickory

Hicoria ovalis obcordata (Muehlenberg and Willdenow) Sudworth.[25]

RANGE.—Southern New England and westward to southern Wisconsin, southwestern Missouri, southwestern Arkansas (Hempstead and Miller Counties), western North Carolina, middle and eastern Georgia, and to central Alabama and Mississippi; Louisiana (West Felician Parish).

NOTE ON NOMENCLATURE.—Formerly designated, in part, as *Hicoria microcarpa* (Nuttall) Britton, in part, and as *Carya microcarpa* Darlington, in part.

NAME IN USE

Hickory

Hicoria ovalis odorata (Sargent) Sudworth.

RANGE.—Southern New England, eastern Pennsylvania, and the District of Columbia to western New York, Ohio, southeastern Ontario, southern Michigan (Washtenaw County), Indiana, and southern Illinois. Detected also in Georgia (vicinity of Atlanta) and eastern Mississippi (Starkville, Oktibbeha County).

NOTE ON NOMENCLATURE.—Formerly designated, in part, as *Hicoria odorata* (Nuttall) Britton, *Hicoria glabra* var. *odorata* Sargent, and as *Carya microcarpa* Darlington.

NAMES IN USE

Small Pignut (Md.).
Little Pignut (Md.).
Little Shagbark (Md.).
Pignut Hickory.

Hicoria ovalis borealis Ashe.[26]

RANGE.—Southern Michigan (vicinity of Detroit; said to have been found also in southwestern part of the State).

NOTE ON NOMENCLATURE.—Formerly designated as *Hicoria borealis* Ashe.

NAME IN USE

Hickory

Hicoria ovalis obovalis (Sargent) Sudworth.

RANGE.—Southern New England to Missouri, northern and southwestern Arkansas, and southeastern Oklahoma (Rich Mountain); occurring also in western North Carolina, the coast of Georgia, and in north-central Alabama.

NOTE ON NOMENCLATURE.—Formerly designated as *Hicoria glabra* Sargent, in part.

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[24] The exact definition of the species represented by this name, which is based on *Juglans ovalis* Wangenheim (1787), has long been in doubt, but it appears to have been cleared up recently by C. S. Sargent (Bot Gaz., LXVI, 245, 1918). The type of this species, as designated by the name *Juglans ovalis* Wangenheim, was previously considered a form of *Carya* or *Hicoria ovata*, of authors. It is now evident that *Hicoria ovalis* (Wangenheim) Sudworth properly refers to a large very widely distributed species with extremely variable fruit and is not to be considered a form of the true shagbark. The leaves usually have seven leaflets, and the trunk bark is often, but not always, divided into small, separable scales. The comparatively small ripe fruit has a thin husk, which is split to the base by four sutures. The type form of this species is much less common than are the following well-marked varieties.

[25] C. S. Sargent (l. c.) has characterized a form of this variety as *Carya ovalis* var. *obcordata* f. *vestita*, a single tree of which was found in southwestern Indiana (Knox County).

[26] C. S. Sargent (l. c.) has described a form of this variety as *Carya ovalis* var. *obovalis* f. *acuta*, which he previously designated as *Carya porcina* var. *acuta*. This form occurs in the vicinity of Rochester, New York.

NAME IN USE

Hickory

Hicoria ovalis hirsuta (Ashe) Sudworth.

RANGE.—North Carolina (southern Appalachian Mountains).
NOTE ON NOMENCLATURE.—Formerly designated as *Hicoria glabra hirsuta* Ashe.

Hicoria ovalis mollis (Ashe) Sudworth.

RANGE.—Ohio (Adams County, in the vicinity of Twin Creeks).
NOTE ON NOMENCLATURE.—Formerly designated as *Carya ovalis mollis* Ashe.

NAME IN USE

Hickory

Hicoria floridana (Sargent) Sudworth.[27]

RANGE.—East coast of Florida (from Volusia County to Jupiter Island, Palm Beach County; also in Orange County—near Orlando—and in south De Soto County and on Pensacola Bay).

NAMES IN USE

Florida Hickory. Hickory.

Hicoria buckleyi (Durand) Sudworth.[28]

RANGE—Northern and eastern Texas (Cherokee, San Augustine, Grayson, and Atascosa Counties); Oklahoma (Muskogee County).

NAMES IN USE

Texas Hickory (lit.). Hickory.
Buckleys Hickory.

Hicoria buckleyi arkansana (Sargent) Ashe.[29]

RANGE.—Southern Indiana (Knox County) and Illinois, Missouri and southward to Arkansas (Ozark and Rich Mountains), Oklahoma (Rich Mountain), eastern Texas, and western Louisiana. Probably has a wider range.
NOTE ON NOMENCLATURE.—Formerly designated as *Carya arkansana* Sargent.

NAME IN USE

Hickory

Hicoria villosa (Sargent) Ashe. **Pignut Hickory.**

RANGE.—Missouri (St. Louis County); Illinois; Arkansas; Oklahoma.
NOTE ON NOMENCLATURE.—Formerly designated as *Hicoria glabra* var. *villosa* Sargent.

NAME IN USE

Pignut Hickory

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[27] Frequently shrubby, with abundant fruit.
[28] Originally described, in 1860, as *Carya Texana Buckleyi*, a name previously applied to another southwestern hickory, on account of which it was renamed *Carya Buckleyi* Durand in 1861. Apparently, however, it was neglected until C. S. Sargent (Trees and Shrubs, II, 205, 1913) restored it to our tree flora.
[29] C. S. Sargent (op. cit., 250) characterizes a form of this variety as *Carya Buckleyi* var. *arkansana* f. *pachylemma*, which occurs in the vicinity of Fulton, Hempstead County, Arkansas. Recently designated as *Hicoria buckleyi pachylemma* Ashe.

Family MYRICACEÆ

MYRICA Linnæus

Myrica cerifera Linnæus. **Wax-myrtle.**

RANGE.—New Jersey (Cape May), Delaware, and Maryland to southern Florida and west in the Gulf States to Texas (San Patricio County); inland in Mississippi (Jackson County), in Louisiana (vicinity of Natchitoches); in Arkansas (Ouachita River; Hempstead and Miller Counties), and in Texas (to Cherokee County).

NAMES IN USE

Wax Myrtle (N. J., Del., N. C., S. C., Ala., Fla.).
Bayberry (N. J., Del., N. C., S. C., Ala., Fla.).
Waxberry (S. C.).
Cirier (La.).
Candleberry (Fla.).
Myrtle (Fla.).
Myrtletree (Fla.).
Puckerbush (Fla.).
Southern Wax Myrtle (lit.).
Tallow Bay-berry.

Myrica inodora Bartram. **Wax-myrtle.**

RANGE.—Florida (near Apalachicola, St. Andrews Bay, and in Jackson County); Alabama (vicinity of Mobile and Stockton); Mississippi (Poplarville); Louisiana (Bogalusa in Washington Parish).

NAMES IN USE

Odorless Myrtle (lit.). Wax-myrtle.

Myrica californica Chamisso. **Pacific Wax-myrtle.**

RANGE.—Pacific coast region from Puget Sound to California (Santa Monica).

NAMES IN USE

California Bayberry.
Myrtle.
Bayberry (Calif.).
California Myrtle (Calif.).
Wax Myrtle (Calif.)
California Wax-myrtle (lit.).
Pacific Wax-myrtle.

Family LEITNERIACEÆ

LEITNERIA Chapman

Leitneria floridana Chapman. **Corkwood.**

RANGE.—Georgia (Altamaha River); western Florida (swamp near Apalachicola); southeastern Missouri (Butler and Duncan Counties); southeastern Texas (Brazos River swamps in vicinity of Columbia); Arkansas (Lincoln and Clay Counties).

NAME IN USE

Corkwood

Family SALICACEÆ

POPULUS Linnæus

***Populus tremuloides** Michaux. **Aspen.**

RANGE.—Southern Labrador to Hudson Bay (southern shores) and northwestward to the Mackenzie River (near mouth); southward through northeastern United States and in the mountains to southern Kentucky, to northern Ohio, Indiana and Illinois, eastern and central Iowa and northern Missouri.

NOTE ON NOMENCLATURE.—Includes *Populus tremuloides reniformis* Tidestrom.

NAMES IN USE

Aspen (N. H., Mass., R. I., Conn., N. Y., N. J., Pa., Del., Ill., Ind., Wis., Mich., Minn., Ohio, Ontario).
Quaking Asp (N. Y., Pa., Del., Ill., Iowa, Minn.).
American Aspen (Vt.).
Aspen Leaf (Pa.).
White Poplar (Mass.).
Trembling Poplar (Minn.).
American Poplar (Minn.).
Poplar (Vt., N. Y., Ill., Minn.).
Popple (Wis., Iowa).
Tremble (Quebec).
Trembling Aspen (Iowa).
Quaking Aspen (lit. and hort.).
Quiver-leaf.

VARIETY DISTINGUISHED IN CULTIVATION

Populus tremuloides pendens Sudworth. **Weeping Aspen.**

Populus tremuloides vancouveriana (Trelease) Sargent.[30] **Vancouver Aspen.**

RANGE.—Believed to be limited in its range to the region west of the Cascade Mountains from Vancouver Island, British Columbia, southward to the head of Puget Sound; occurring also in Oregon (Washington and Benton Counties). Frequent in the coast region of Vancouver Island.

NOTE ON NOMENCLATURE.—Originally described as *Populus vancouveriana* Trelease.[31]

NAME IN USE

Vancouver Aspen

***Populus tremuloides aurea** (Tidestrom) Daniels.[32] **Aspen.**

RANGE.—From the Yukon River to Saskatchewan and southward in the Rocky Mountain region to southern New Mexico and Arizona (mountains); westward to British Columbia (Skena River), western Washington and Oregon, California (Sierra Nevada and southern mountains); southward into Mexico (Sierra de Laguna, Lower California, and in the mountains of Chihuahua and Sonora); eastward to the Dakotas and western Nebraska.

NOTE ON NOMENCLATURE.—First described in 1911 as *Populus aurea* Tidestrom, prior to which it was not considered distinct from the ordinary forms of *Populus tremuloides* Michaux.

NAMES IN USE

Golden Aspen.
Aspen (N. Dak., Nebr., Oreg., Utah, Idaho, Nev., Mont., Colo., Calif.).
Quaking Asp (Calif., N. Mex., Idaho, Colo., Ariz., Mont., Nebr., Utah, Oreg., Nev.).
Mountain Asp (Mont.).
Trembling Poplar (Colo.).
American Poplar (Colo.).
Poplar (Mont.).
Popple (Mont.).
Aspen Poplar (Calif., Mont.).

Populus tremuloides cercidiphylla (Britton) Sudworth. **Aspen.**

RANGE.—Western Wyoming (upper basin of Hoback River).

NOTE ON NOMENCLATURE.—Originally described as *Populus cercidiphylla Britton*.[33]

NAMES IN USE

Roundleaf Aspen. Aspen.

[30] David Lyall appears to have been the first explorer to discover this tree in Vancouver Island, where he found it in 1858–59, since which time it has not been considered specifically or varietally distinct from *Populus tremuloides* Michaux.

[31] Apud Tidestrom in Piper and Beattie, Flora Northwest Coast, 118, 1915.

[32] Univ. Mo. Studies, II, 98, 1911. This variety is distinguished from the species from the fact that its leaves turn a golden yellow or orange in autumn, while in the species they become pale lemon yellow.

[33] In Britton and Shafer, North Am. Trees, 180, 1908.

*Populus grandidentata Michaux. Largetooth Aspen.

RANGE.—Nova Scotia, New Brunswick, southern Quebec, and Ontario to northern Minnesota, and northeastern North Dakota; southward to Pennsylvania, Ohio, and Iowa and (along the Allegheny Mountains) to North Carolina, central Kentucky, and Tennessee.

NAMES IN USE

Large-toothed Aspen (N. J., Pa., Del., S. C., Mich., Minn.).
Poplar (Me., N. H., Vt., Mass., R. I., Conn., N. Y., N. J., Pa., W. Va., N. C., S. C., Ga., Ill., Ohio).
Large-toothed Poplar (N. C.).
Large Poplar (Tenn.).
White Poplar (Mass.).
Popple (Me.).
Large American Aspen.

Populus grandidentata meridionalis Tidestrom.

RANGE.—Delaware, Maryland, Virginia, North Carolina; southern Ohio; southern Indiana and Illinois.

VARIETY DISTINGUISHED IN CULTIVATION

Populus grandidentata penduliformis Sudworth. Weeping Largetooth Aspen.

*Populus heterophylla Linnæus. Swamp Cottonwood.

RANGE.—From Connecticut (Southington), New York (Essex, Clinton, and Franklin Counties), and Long Island (Northport) southward near the coast to southern Georgia and western Florida (Apalachicola River); westward in Gulf region to western Louisiana and through Arkansas to southeastern Missouri, western Kentucky and Tennessee, and southern Illinois and Indiana, and in Ohio (Williams, Ottawa, Knox, Logan, Shelby, Richland, Auglaize, Licking, and Lake Counties).

NAMES IN USE

River Cottonwood (R. I., Miss., La., Ohio).
Swamp Cottonwood (S. C., Miss., Del.).
Black Cottonwood (Ala.).
Cottonwood (N. Y., Va., N. C., S. C., Miss.).
Downy Poplar (Tenn., Ala., Ark.).
Swamp Poplar (N. J.).
Cotton-tree (N. C.).
Liar (La.).
Langues de femmes (La.).
Cotton Gum (N. C.).

*Populus balsamifera Linnæus. Balsam Poplar.

RANGE.—Coast of Alaska and valley of Mackenzie River (latitude 56°) to Hudson Bay and Labrador; southward to northern New England and New York (Taughannock Falls, Cayuga Lake), central Michigan and Minnesota, North Dakota (Rolette County); South Dakota (Black Hills), northwestern Nebraska, Colorado, northern Montana, Idaho, Oregon and, Nevada.

NOTE ON NOMENCLATURE.—Designated by some authors as *Populus tacamahaca* Miller.

NAMES IN USE

Balsam (N. H., N. Y., Wis., Mich., Minn., Nebr., Mont., Ohio, Ont.).
Balm-of-Gilead (Me., N. H., Vt., Mass., R. I., Conn., N. Y., Mich., Nebr., Minn., N. Dak., Ont.).
Cottonwood (Idaho).
Poplar (Wis., Minn.).
Balsam Poplar (N. H., Nebr., Minn.).
Tacamahac (Minn.).
Baumier (Quebec).
Rough-barked Poplar (Hudson Bay region).

VARIETIES DISTINGUISHED IN CULTIVATION

Populus balsamifera intermedia Loudon.
Populus balsamifera viminalis Loudon.
Populus balsamifera latifolia (Moench) Loudon.

Populus balsamifera candicans (Aiton) Gray.
Balm-of-Gilead Poplar.

RANGE.—The natural range of this tree has not been satisfactorily determined. It is believed not to be indigenous in the northeastern States and eastern Canada, but as found growing there spontaneously it is thought to have been established from cultivated trees, the origin of which is in doubt. It is said to extend from Newfoundland to Virginia and west to Michigan, South Dakota and Alberta, and Alaska.

NOTE ON NOMENCLATURE.—Originally described as *Populus candicans* Aiton, a name under which it is still maintained by some authors.

NAMES IN USE

Balm-of-Gilead (Me., N. H., Vt., Mass., N. Dak., Minn., Ont.).
Balsam (Mich., Md., and Va. cult.).
Hairy Balm-of-Gilead.
Balm-of-Gilead Poplar (lit.).
Ontario Poplar (lit.).

× **Populus jackii** Sargent. **Jacks Cottonwood (Hybrid).**

RANGE.—Quebec (Nun's Island, at the mouth of Chateaugay River, and at Beauharnois on the south border of the St. Lawrence River); Michigan (vicinity of South Haven).[34]

NOTE ON NOMENCLATURE.—Believed to be a hybrid between *Populus balsamifera* Linnæus and *Populus deltoides* Marshall.

NAME IN USE

Jacks Cottonwood

Populus trichocarpa Hooker. **Black Cottonwood.**

RANGE.—California (west slope of Sierra Nevada and coast ranges to San Diego County); coast islands; Lower California (San Pedro Martir Mountains).

NAMES IN USE

Black Cottonwood.
Cottonwood (Calif., trade).
Balm Cottonwood (Calif.).

***Populus trichocarpa hastata** Henry. **Northern Black Cottonwood.**

RANGE.—Southern Alaska to northern California; eastward in Washington and Oregon to Idaho and western Nevada (mountains); also in Tulare County, California (East Fork Kaweah River—Sargent).

NAMES IN USE

Cottonwood (Oreg.).
Balsam Cottonwood.
Balm (Oreg.).
Northern Black Cottonwood.
Black Balsam Poplar (hort.).

Populus acuminata Rydberg. **Lanceleaf Cottonwood.**

RANGE.—Eastern foothills of the Rocky Mountains and from Assiniboia to northwestern Nebraska, eastern Wyoming, South Dakota (Black Hills), and southern Colorado to southeastern Utah, and in southwestern New Mexico. Said to occur in Nevada.[35]

NAMES IN USE

Rydberg's Cottonwood (lit.).
Cottonwood.
Lanceleaf Cottonwood.
Smoothbark Cottonwood (lit. and hort.).

[34] Cultivated also in the Arnold Arboretum, Jamaica Plain, Mass.
[35] Fide Britton and Shafer, North Am. Trees, 170, 1908.

Populus acuminata rehderi Sargent.

RANGE.—Southeastern New Mexico.

× **Populus andrewsii** Sargent.[36] **Hybrid.**

RANGE.—Known only from a cultivated tree growing near Boulder, Colorado.

NOTE ON NOMENCLATURE.—Supposed to be a hybrid between *Populus acuminata* Rydberg and *Populus sargentii* Dode.

Populus angustifolia James.[37] **Narrowleaf Cottonwood.**

RANGE.—From southern Alberta to South Dakota (Black Hills) and northwestern Nebraska (Hat Creek); southward in the mountain regions to Washington (Yakima County), central Nevada, New Mexico (vicinity of Silver City), northern and southern Arizona (Santa Catalina Mountains); Mexico (Chihuahua).

NOTE ON NOMENCLATURE.—Designated also as *Populus fortissima* A. Nelson and Macbride.

NAMES IN USE

Black Cottonwood (N. Mex., Utah, Colo.).
Narrowleaved Cottonwood (Colo., Utah).
Narrow-leaved Poplar (Mont., Utah).
Balsam (Mont.).
Cottonwood (Idaho, Colo.).
Willow Cottonwood (Idaho).
Bitter Cottonwood (Idaho).
Willow-leaved Cottonwood (Mont.).

Populus arizonica Sargent.[38] **Arizona Cottonwood.**

RANGE.—New Mexico (in and near Silver City); Arizona (Santa Catalina Mountains; planted in and near Tucson, Pima County, and at Douglas, Cochise County; in Yavapai County near Clarksdale, Camp Verde, and Gannett Creek in vicinity of Prescott; along Salt River, near the Roosevelt Dam and Gila Creek, near Flagstaff).[39]

NOTE ON NOMENCLATURE.—Formerly designated as *Populus mexicana* Westmael, a Mexican species which is not known to occur within our border.

NAME IN USE

Arizona Cottonwood

***Populus deltoides** Marshall. **Eastern Cottonwood.**

RANGE.—From Vermont (Lake Champlain); western New York; Pennsylvania (Northampton County); Maryland (Bare Hill, Baltimore County; Montgomery County, north bank of Potomac River opposite Plummer Island, several miles north of Washington, D. C.); central-eastern Mississippi (Lowndes County, in the vicinity of Artesia; Oktibbeha County, in the vicinity of Starkville). Range imperfectly known at present.

NOTE ON NOMENCLATURE.—Formerly long designated as *Populus monilifera* Aiton. It is the tree described as *Populus angulata* Michaux f. Recently some authors have applied *Populus balsamifera* Linnæus to it, which in the writer's opinion can not apply.

NAMES IN USE

Cottonwood.
Eastern Cottonwood (lit.).

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[36] According to C. S. Sargent (Trees and Shrubs, II, 212, 1913), this tree was grown from cuttings taken from a wild tree found near Boulder, Colo., by E. H. Andrews, in whose nursery the cultivated tree is standing. Another tree growing at Walsenberg, Huerfano County, Colo., is believed to be of the same origin.

[37] Britton and Shafer (op. cit., 173, fig. 129) include in this sequence as a new species *Populus Tweedyi* Britton, which the writer has not seen, but which appears to be very distinct from other cottonwoods in the form of its leaves and fruit capsules. It was discovered by Frank Tweedy in 1901 at Encampment, Carbon County, southern Wyoming.

[38] A Mexican variety of this species has been distinguished as *Populus arizonica jonesii* Sargent, which occurs in the valley of Palms, near Chihuahua, and Saltillo and at Piedras Negras (Sargent).

[39] Possibly occurring also on Mill Creek above Forest Home, San Bernardino Mountains (Sargent). In 1899 the writer saw a number of trees in the Owens River Valley west of Lone Pine which are now believed to be of this species. These trees were seen at some distance.

VARIETIES DISTINGUISHED IN CULTIVATION

Populus deltoides aurea (Nicholson) Sudworth. **Goldenleaf Cottonwood.**
Populus deltoides erecta (Selys) Sudworth.
Populus deltoides crispa (Dippel) Sudworth. **Curly-leaf Cottonwood.**

*Populus deltoides virginiana (Castiglioni) Sudworth.[40] Southern Cottonwood.

RANGE.—From Quebec and Lake Champlain southward through western New England to Florida (Apalachicola River); westward to southern Minnesota, the Dakotas, eastern Nebraska and Kansas, Oklahoma (lower Big Creek) and Texas (Brown County).

NOTE ON NOMENCLATURE.—Formerly included under *Populus deltoides* Marshall, in so far as its Southern range is concerned.

NAMES IN USE

Cottonwood (N. H., Vt., Mass., R. I., N. Y., Pa., Md., Miss., N. J., W. Va., Ky., Mo., Ill., Wis., Kans., Nebr., Iowa, Minn., Mich., Ohio, Ontario, N. Dak., S. Dak. (trade).
Big Cottonwood (Nebr.).
Yellow Cottonwood (Ark., Iowa, Nebr.).
Cotton-tree (N. Y.).
Carolina Poplar (Pa., Ind., Ohio).
Vermont Poplar (Vt.).
Whitewood (Iowa).
Aspen Cottonwood (N. C.).
Necklace Poplar.
Water Poplar.
River Poplar.
Southern Cottonwood (lit.).

Populus deltoides pilosa (Sargent) Sudworth.

RANGE.—Within the range of the preceding variety east of the Ohio Valley.

× Populus eugenei Hort. ex Dode.[41] Carolina Poplar (Hybrid).

RANGE.—Known only as a street tree more or less extensively planted in eastern United States. The extent to which this hybrid has been planted here is unknown.

NOTE ON NOMENCLATURE.—Believed to be a hybrid between *Populus deltoides* Marshall and *Populus nigra italica* Du Roi, only the male form of the tree being known. Designated by some authors as *Populus canadensis* var. *Eugenei* Schelle.

NAMES IN USE

Carolina Poplar.
Sudden Sawlog.
"Norway Poplar."

*Populus sargentii Dode. Cottonwood.

RANGE.—Foothills region east of the Rocky Mountains from the Saskatchewan to New Mexico and eastward to the Dakotas, Nebraska, western Kansas (Rawlins County), Oklahoma, and into western Texas.

NOTE ON NOMENCLATURE.—Long supposed to be a western form only of the eastern Cottonwood (*Populus deltoides* Marshall), it was in the meantime recognized by several authors as varietally or specifically different from the latter species, and has been variously designated as *Populus angulata* Porter and Coulter

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[40] *Populus angulata* Aiton (1789), on which *Populus deltoides* var. *angulata* Sargent was based (Trees and Shrubs, II, 212, 1913), is older, but certainty of its application to our southern cottonwood can not be established.

Populus deltoides pilosa (Sargent) Sudworth differs from *Populus deltoides virginiana* (Castiglioni) Sudworth in having soft hairs on the midrib and larger veins.

[41] According to C. S. Sargent (Trees and Shrubs, II, 212, 1913) the type of this hybrid sprang up many years ago in the nurseries of Simon-Louis Frères at Plantières near Metz, in Alsace. It is not assumed, however, that all of the trees of this hybrid now in cultivation were derived from the type tree. Doubtless many other trees of the same parentage were produced and propagated elsewhere. Some 30 years ago the writer obtained cuttings from C. S. Harrison, Falling Water, Nebr., of a poplar which he was distributing as the "Sudden Sawlog." The characteristics of this tree, which Mr. Harrison obtained from Europe, appear to be those of × *Populus eugenei*. It is also known as "Norway Poplar."

(not Aiton), *Populus deltoides occidentalis* Rydberg, *Populus occidentalis* Rydberg, and as *Populus sargentii* Dode, the latter being the oldest name.

NAME IN USE

Cottonwood

***Populus fremontii** S. Watson. **Cottonwood.**

RANGE.—Northern California (headwaters of the Sacramento River, and southward in western part of the State) to Lower California (San Pedro Martir Mountains).

NAMES IN USE

Cottonwood (Calif.). Fremont Cottonwood (Hort.).

Populus fremontii thornberii Sargent.

RANGE.—Southern Arizona (near Tucson); southwestern New Mexico (vicinity of Silver City). Attention was called to this tree first by J. J. Thornber, after whom it was named.

NOTE ON NOMENCLATURE.—Formerly probably considered a form of *Populus fremontii* S. Watson.

Populus fremontii pubescens Sargent.

RANGE.—Southern Utah (Washington County), southwestern Nevada (Mineral County) and in southern California (San Bernardino and San Diego Counties, where it occurs abundantly.).

NOTE ON NOMENCLATURE.—Formerly considered an eastern form of *Populus fremontii* S. Watson.

Populus fremontii toumeyi Sargent.

RANGE.—Arizona (vicinity of Tucson; Pima Canyon in Santa Catalina Mountains; along Santa Cruz River in Pima County; at Nogales; and on Hermit Creek in Grand Canyon).

NOTE ON NOMENCLATURE.—Formerly probably considered a form of *Populus fremontii* S. Watson.

Populus fremontii macrodisca Sargent.

RANGE.—Southwestern New Mexico (vicinity of Silver City, Grant County).

NOTE ON NOMENCLATURE.—Formerly probably treated as a form of *Populus fremontii* S. Watson.

× **Populus parryi** Sargent. **Hybrid.**

RANGE.—California (on Cottonwood Creek—west side of Owen's Lake, in Inyo County, and in the Canoda de las Uvas—approximately 2 miles north of Fort Tjon, Kern County—Coville and Funston). Also planted in streets of San Bernardino.

NOTE ON NOMENCLATURE.—Believed to be a hybrid between *Populus fremontii* S. Watson and *Populus trichocarpa* Hooker. C. C. Parry appears to have first noticed the planted trees in San Bernardino in 1883, believing them to be of an exotic species; while in 1892 F. V. Coville, was the first to point out that the wild tree has characteristics between *Populus fremontii* S. Watson and *Populus trichocarpa* Hooker.

Populus palmeri Sargent. **Cottonwood.**

RANGE.—Southwestern Texas (Upper Nueces River, Uvalde County; Palo Pinto County—vicinity of Strawn). Discovered by E. J. Palmer in 1918 (Sargent).

NAME IN USE

Cottonwood

Populus texana Sargent. **Cottonwood.**

RANGE.—Northwestern Texas (on the Canadian River, near Canadian, Hemphill County; near Amarillo; Palo-duro Canyon, Randall County; near Post, Garza County; near Sweetwater, Nolan County—Sargent.).

NAME IN USE

Cottonwood

Populus wislizenii (Watson) Sargent. **Cottonwood.**

RANGE.—Western Texas and New Mexico (valley of the Rio Grande) and adjacent sections of Mexico, extending also (along streams) into western Colorado (Mesa County), and possibly into southeastern Utah.

NOTE ON NOMENCLATURE.—Originally described as *Populus Fremontii* var., *Wislizenii* S. Watson, and later considered a form of *Populus Fremontii* S. Watson.

NAMES IN USE

Wislizenus Cottonwood. Cottonwood.

***Populus macdougalii** Rose. **MacDougal Cottonwood.**

RANGE.—Southeastern California and southwestern Arizona (on both sides of the Colorado River in the vicinity of Yuma, in dense pure stands; reported also from southeastern Arizona in all the ten divisions of the Coronado National Forest—fide Thornber). Frequently planted for shade in Yuma and other desert towns and stations along the Southern Pacific Railroad.

NAME IN USE

MacDougal Cottonwood

Populus alba Linnæus. **White Poplar.**

RANGE.—Europe and Asia. Widely naturalized in Canada and the United States by cultivation from New Brunswick and Ontario to Virginia and Maryland.

NAMES IN USE

White Poplar.
Silver-leaved Poplar.
Abele.
Abele-tree.
White-leaf.
Aspen.
White Aspen.
Great Aspen.
Rattler-tree.
White-bark.

VARIETIES DISTINGUISHED IN CULTIVATION

Populus alba nivea (Willdenow) Loudon. **Snowy Poplar.**
Populus alba canescens (Smith) Loudon. **Silver Poplar.**
Populus alba canescens umbraculifera Sudworth. **Weeping Silver Poplar.**
Populus alba bolleana Louche. **Bolle Poplar.**
Populus alba nutans Sudworth. **Weeping White Poplar.**
Populus alba globosa Dippel. **Roundtop Poplar.**

Populus nigra Linnæus. **Black Poplar.**

RANGE.—Europe. Naturalized in several localities in the East (valleys of the Hudson and Delaware Rivers).

NAMES IN USE

Black Poplar.
Willow Poplar.
Catfoots Poplar.
Mormon Tree.
Devil's Fingers.
Old English Poplar.

VARIETIES DISTINGUISHED IN CULTIVATION

Populus nigra italica Du Roi. **Lombardy Poplar.**
Populus nigra elegans Bailey.

SALIX Linnæus

*Salix nigra Marshall. Black Willow.

RANGE.—Southern New Brunswick, Quebec and Ontario to Georgia and central Alabama; west to southeastern North Dakota, eastern South Dakota, Nebraska, Kansas, Oklahoma (Ouachita River and Rich Mountain), southwestern Arkansas, western Texas (Valverde County).

NAMES IN USE

Black Willow (N. H., Vt., R. I., N. Y., Pa., Del., S. C., Fla., Ala., Miss., La., Tex., Ill., Wis., Mich., Minn., Nebr., Kans., Ohio, Ont., N. Dak.).
Swamp Willow (N. C., S. C.).
Willow (N. Y., Pa., N. C., S. C., Miss., Tex., Ky., Mo., Nebr., trade).

*Salix nigra altissima Sargent. Black Willow.

RANGE.—Southern Arkansas, Louisiana, and eastern Texas.

NAMES IN USE

Tall Black Willow.
Black Willow.

Salix nigra lindheimerii Schneider. Black Willow.

RANGE.—Central and western Texas (possibly also in eastern Texas and southern Oklahoma) and southward into Mexico (Coahuila, Nuevo Leon, Tamaulipas).

NOTE ON NOMENCLATURE.—Formerly designated as *Salix Wrightii* Sargent, not of Andersson.

NAME IN USE

Black Willow

Salix gooddingii Ball. Dudley Willow.

RANGE.—Northern California (Shasta and Tehama Counties) and southward (in the interior) to Lower California; eastward in Arizona (central and southern) and southeastern Nevada; southern New Mexico to western Texas (El Paso and Jeff Davis Counties); northern Mexico.

NOTE ON NOMENCLATURE.—Formerly designated as *Salix nigra vallicola* Dudley, and as *Salix vallicola* (Dudley) Britton.

NAME IN USE

Dudley Willow

Salix harbinsonii Schneider. Harbinson Willow.

RANGE.—Southeastern Virginia (Norfolk County—Dismal Swamp); eastern North Carolina (Wayne County—vicinity of Goldsboro); South Carolina and Georgia (coast region and westward in Georgia to the Flint River, and up the Savannah River to Richmond County); northern Florida (Duval and Calhoun Counties).

NAME IN USE

Harbinson Willow

Salix amygdaloides Andersson. **Peachleaf Willow.**

RANGE.—Quebec (near Montreal) and New York (Cayuga County) to the upper Saskatchewan; southward to Ohio and Missouri, and westward in the Plains region to the Rocky Mountains, where it ranges from northwestern Texas to Oregon, Washington, and southeastern British Columbia.

NAMES IN USE

Willow (Nev., Oreg., Colo., Utah, Mont.).
Black Willow (Mo., Idaho).
Common Willow.
Peach Willow.
Almond Willow.
Peachleaf Willow (lit.).
Almondleaf Willow.

Salix amygdaloides wrightii (Andersson) Schneider.

RANGE.—Western Texas (Ward County; El Paso County—on the Rio Grande in the vicinity of El Paso and Belon; Potter County—Amarillo Creek); southern New Mexico (Otero County).

NOTE ON NOMENCLATURE.—Formerly designated as *Salix Wrightii* Andersson and as *Salix nigra Wrightii* Andersson, some authors still maintaining it as a distinct species under the former name.

NAMES IN USE

Black Willow.
Wright's Willow (lit.).

Salix lævigata Bebb.[42] **Red Willow.**

RANGE.—Western California (from the southern boundary of Oregon) to the southern border of the state, and eastward to the lower western slopes of the southern Sierras),[43] eastward to Arizona (Yavapai and Mohave Counties), southern Nevada, and southwestern Utah.

NAMES IN USE

Red Willow.
Black Willow.
California Black Willow.
Bebb Willow.
Smooth-leaf Willow.
Spotted-leaf Willow.
Polished Willow.

Salix longipes Shuttleworth.

RANGE.—North Carolina (coast region) to southern Florida (Keys of the Everglades), and west in northern Florida to Wakulla County (Saint Marks River); Cuba.

NOTE ON NOMENCLATURE.—Formerly designated as *Salix occidentalis* Koch.

NAME IN USE

Black Willow

Salix longipes venulosa Schneider.

RANGE.—North Carolina (Craven County) in the coast region to northern and western Florida, extending inland in Georgia to Richmond and Carlton Counties; Louisiana (vicinity of New Orleans); southwestern Oklahoma; eastern Texas (Kendall, Kerr, Blanco, Bandora, Uvalde Counties).

NAME IN USE

Black Willow

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[42] W. L. Jepson (Silva of Calif., 177, 1910) characterizes a form of this species as *Salix lævigata* forma *araquipa* Jepson, which occurs in Araquipa Hills, Solano County, California.

[43] Britton and Shafer (North Am. Trees, 187, 1908) extend the range of this willow into Nevada and Utah, while Rydberg (Flora Rocky Mts., 191, 1917) records its occurrence as far east as Utah.

Salix longipes wardii (Bebb) Schneider.

RANGE.—Western Maryland (Allegheny County) and District of Columbia (Potomac River) to Virginia (Fairfax and Elizabeth Counties); northern Kentucky and Tennessee; Mississippi (Tishomingo County); Illinois (St. Clair and Madison Counties); Missouri (from Pike County) to Kansas, western Arkansas, and eastern Oklahoma.

NOTE ON NOMENCLATURE.—Formerly designated as *Salix wardii* Bebb.

NAMES IN USE

Black Willow.
Bebb Willow.
Ward's Willow (lit.).

Salix bonplandiana toumeyi (Britton) Schneider.

RANGE.—Central and southern Arizona (Sabino Canyon, Sycamore Canyon, and Santa Catalina Mountains); southwestern New Mexico (Grant County—San Luis Mountains); Mexico (Chihuahua, Sonora, Lower California).

NOTE ON NOMENCLATURE.—*Salix bonplandiana* Humboldt, Bonpland, and Kunth, formerly supposed to occur within our borders, and therefore made to include the present variety, is now believed to be found only in Mexico. Designated also as *Salix Toumeyi* Britton.

NAME IN USE

Black Willow

Salix lasiandra Bentham. **Western Black Willow.**

RANGE.—Yukon (vicinity of Dawson), Vancouver Island, and southward in the coast region of Washington and Oregon; California (coast ranges and Sierra Nevada); New Mexico (Socorro and Santa Fe Counties); Colorado (Chaffee County). Eastern range imperfectly known.

NOTE ON NOMENCLATURE.—This species includes *Salix lasiandra lyallii* Sargent, previously described as *Salix speciosa* Nuttall (1842), not Hooker and Arnott (1841), a very broad and longleafed phase. No floral or fruit characters have been found for distinguishing it from the type, with which many intermediate leaf forms connect it.

NAMES IN USE

Willow (Calif., Oreg.).
Waxy Willow (Calif.).
Black Willow.
Yellow Willow.
Western Black Willow (lit.).

Salix lasiandra lancifolia Bebb. **Western Black Willow.**

RANGE.—Yukon (vicinity of Dawson) to Washington (Nisqually River); Oregon (Willamette River) and to southern California (San Bernardino Mountains).

NAME IN USE

Western Black Willow

Salix lasiandra caudata (Nuttall) Sudworth.
Western Black Willow.

RANGE.—Northeastern Oregon and eastern Washington into Idaho and from Wyoming to Colorado, Utah, and Nevada.

NAME IN USE

Western Black Willow

Salix lucida Muehlenberg. **Shiny Willow.**

RANGE.—Newfoundland to Hudson Bay and northwestward to Great Bear Lake, Mackenzie River, and to the Rocky Mountains; southward to Pennsylvania, Iowa (northeastern), North Dakota (Turtle Mountain), and Nebraska (eastern).

NAMES IN USE

Shiny Willow.
Shining Willow (lit.).
Glossy Willow.

Salix lucida intonsa Fernald.

RANGE.—New Brunswick, Quebec, and northeastern New England.

Salix sessilifolia Nuttall. **Sandbar Willow.**

RANGE.—From southwestern British Columbia and southward in western Washington (Whitcomb County) and Oregon.

NAMES IN USE

Silverleaf Willow.
Sandbar Willow.

Salix longifolia Muehlenberg. **Sandbar Willow.**

RANGE.—Quebec to Athabasca and northwestward to the Yukon; southward through western New England to Virginia; westward to Colorado and southern Texas.

NOTE ON NOMENCLATURE.—Formerly included, in part, under *Salix fluviatilis* Sargent, not Nuttall.

NAMES IN USE

Sandbar Willow.
Longleaved Willow.
Longleaf Willow (lit.).
Narrow-leaved Willow.
River-bank Willow.

Salix longifolia angustissima Andersson. **Sandbar Willow.**

RANGE.—Central and northwestern Texas and southern New Mexico; northeastern Mexico.

Salix longifolia pedunculata Andersson. **Sandbar Willow.**

RANGE.—Western South Dakota and northwestern Wyoming, eastern Montana, Saskatchewan and Alberta to the Yukon River (vicinity of Dawson).

Salix exigua Nuttall. **Sandbar Willow.**

RANGE.—From Alberta and British Columbia (Fraser River) southward to southern California and Nevada; eastward to Idaho, Wyoming (Yellowstone National Park), Nebraska, Colorado, and Arizona; Lower California. Arborescent probably only in Washington.

NOTE ON NOMENCLATURE.—Formerly designated as *Salix fluviatilis exigua* (Nuttall) Sargent.

NAMES IN USE

Coyote Willow.
Sandbar Willow.
Slender Willow.

Salix taxifolia Humboldt, Bonpland, and Kunth. **Yewleaf Willow.**

RANGE.—Texas (near El Paso; Davis Mountain); southern Arizona (near Tucson and on streams in the Santa Catalina, Santa Rita, Dragoon, and Huachuca Mountains; Mexico to Guatemala and in Lower California.

NAME IN USE

Yewleaf Willow

Salix pyrifolia Andersson.[44] **Balsam Willow.**

RANGE.—Newfoundland and Labrador to northern Maine, New Hampshire, and New York; westward to British Columbia and to South Dakota.

NOTE ON NOMENCLATURE.—Formerly designated as *Salix balsamifera* (Hooker) Barratt.

NAME IN USE

Balsam Willow

Salix lasiolepis Bentham. **White Willow.**

RANGE.—Northern California (Klamath River) and southward through the western part of the State to Lower California; Santa Catalina Island; southern Arizona (Tanners Canyon on Huachuca Mountains and White River Canyon on Chiricahua Mountains.[45]

NAMES IN USE

White Willow (Calif.).
California White Willow (lit.).
Arroyo Willow (lit.).
Bigelow Willow (lit.).

Salix mackenzieana Barratt.

RANGE.—Great Slave Lake and southward (in region east of Rocky Mountains) to northern Idaho, western Nevada, and northwestern Wyoming; California (Calaveras and Mariposa Counties).

NOTE ON NOMENCLATURE.—Formerly designated by some authors as *Salix cordata mackenzieana* Hooker.

NAME IN USE

Diamond Willow

Salix missouriensis Bebb. **Missouri River Willow.**

RANGE.—Northeastern Kansas, eastern Oklahoma, western Missouri (Missouri River bottoms) to southwestern Nebraska; also from the vicinity of St. Louis to southeastern and western Iowa[46]; Illinois (Richland County).

NAME IN USE

Missouri River Willow

Salix discolor Muehlenberg. **Pussy Willow.**

RANGE.—Nova Scotia to Manitoba and south to Deleware, southern Indiana and Illinois, South Dakota (Black Hills), Iowa, and northeastern Missouri.

NAMES IN USE

Glaucous Willow (R. I., N. Y., Pa., Miss., Mich., Minn., Ontario).
Pussy Willow (general in northern United States).
Silver Willow.
Swamp Willow (N. J.).
Willow (Vt., N. Y., Mo.).
Bog Willow.

Salix discolor eriocephala (Michaux) Andersson. **Pussy Willow.**

Salix discolor prinoides (Pursh) Andersson. **Pussy Willow.**

[44] Commonly a shrub and known to be arborescent only in the vicinity of Fort Kent on the St. Johns River, Maine (Sargent).

[45] Britton and Shafer (North Am. Trees, 198, 1908) extend the range of this species into Nevada and perhaps also into southern Oregon.

[46] Britton and Shafer (North Am. Trees, 197, 1908) extend the range of this species into Illinois, Kentucky.

Salix bebbiana Sargent.

RANGE.—St. Lawrence River (lower valley) to Hudson Bay and northwestward to the Arctic Circle (Mackenzie River) and British Columbia (coast ranges) and Alaska (Cook Inlet); south to Pennsylvania and west to Minnesota; western Idaho and northern Montana to North Dakota, and South Dakota (Black Hills); Iowa and eastern, central, and western Nebraska, through Colorado to northern Arizona. (Reported also from southeastern Arizona.)

NOTE ON NOMENCLATURE.—Formerly designated as *Salix rostrata* Richardson, not Thuillier.

NAMES IN USE

Beak Willow (lit.).
Bebb Willow (lit.).

Salix scouleriana Barratt. **Mountain Willow.**

RANGE.—From Alaska (Cook Inlet), Yukon (vicinity of Dawson), and British Columbia (Columbia River near Donald), southward to northern California (Sierra Nevada to the San Bernardino Mountains); in the Rocky Mountain region to northern New Mexico and Arizona (San Francisco Mountain); South Dakota (Black Hills).

NOTE ON NOMENCLATURE.—Formerly designated as *Salix nuttallii* Sargent *Salix flavescens* Nuttall, not Host.

NAMES IN USE

Mountain Willow (Mont.).
Willow (Oreg., Utah).
Black Willow.
Nuttall Willow (lit.).
Fire Willow.
Scouler Willow (lit.).

Salix scouleriana crassijulis Andersson.[47] **Mountain Willow.**

RANGE.—Central to southern California (San Bernardino County).

NAME IN USE

Mountain Willow

Salix scouleriana flavescens Schneider. **Mountain Willow.**

RANGE.—California (Sierras) to the Rocky Mountains (in Colorado, New Mexico, Wyoming, and South Dakota (Black Hills).

NAME IN USE

Mountain Willow

Salix amplifolia Coville. **Bigleaf Willow**

RANGE.—Alaska (Disenchantment and Yakutat Bays).

NAMES IN USE

Broadleaf Willow.
Bigleaf Willow.

Salix hookeriana Barratt.

RANGE.—Vicinity of the coast from Vancouver Island to southern Oregon.

[47] *Salix Piperi* Bebb (Gard. and Forest, VIII, 482, 1895; Sargent, Silva, IX. 145, 1896), several individuals of which are known to occur in the vicinity of Seattle, Wash., appears not to be arborescent. In 1896 it was included with our arborescent willows in the belief that eventually it would be found as a tree. As such a form has not been discovered, it seems best to exclude the plant from our tree flora.

Salix sitchensis Sanson.[48] **Silky Willow.**

RANGE.—Alaska (Kadiak Island and Cook Inlet) and southward in the coast region to southern California (Santa Barbara).

NAMES IN USE

Silky Willow (Oreg.).
Sitka Willow (lit.).
Satin Willow.
Silver Willow (lit.).
Velvet Willow (Calif.).

Salix sitchensis angustifolia Bebb. **Silky Willow.**

RANGE.—California (Donner Pass).

NAME IN USE

Silky Willow

Salix alaxensis (Andersson) Coville. **Feltleaf Willow.**

RANGE.—Coast of Alaska (from Alexander Archipelago to Cape Lisbourne, and eastward to the valley of the Mackenzie River and Coronation Gulf).

NAME IN USE

Feltleaf Willow

Salix alba Linnæus.[49] **European White Willow.**

RANGE.—Widely naturalized in eastern North America from Nova Scotia and Ontario to North Carolina and westward to Iowa; probably still farther west.

NAMES IN USE

European White Willow.
White Willow (lit.).
Common Willow.
European Willow.
Huntington Willow.

Salix babylonica Linnæus. **Babylon Weeping Willow.**

RANGE.—Western Asia. Naturalized in a number of localities from the Central Atlantic States westward to Michigan and Illinois.

NAMES IN USE

Weeping Willow.
Babylon Weeping Willow (lit.).
Drooping Willow.

Family BETULACEÆ

CARPINUS Linnæus

Carpinus caroliniana Walter. **Blue Beech.**

RANGE.—Nova Scotia, Maine (Penobscot County, vicinity of Orono and Sagadahoc County, vicinity of Woolwich), and western and southern Quebec to Georgian Bay (north shores), southward to Florida (Indian River and Tampa Bay); west in United States to central Minnesota, Iowa, eastern Nebraska and Kansas, Arkansas and Oklahoma and eastern Texas, southern Mexico and Central America.

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[48] W. L. Jepson (Silva of California, 182, 1910), characterizes three forms of this species as occurring in California; forma *Coulteri* Jepson (San Francisco and southward); forma *parvifolia* Jepson (Melburne to Comptehe, Mendocino County); forma *Ralphiana* Jepson (Marble Fork of Kaweah River), the latter being named in honor of Ralph Hopping.

[49] *Salix alba cærulea* Andersson, and *Salix alba vitellina* (Linnæus) Willkomm and Lange appear to be the forms of White Willow more commonly met with in this country than is the typical form of the species.

NAMES IN USE

Blue Beech (N. H., Vt., R. I., N. Y., Pa., Miss., Tex., Ky., Mich., Iowa, Nebr., Minn., Ohio, Ont.).
Water Beech (R. I., N. Y., Pa., Del., W. Va., Ohio, Ill., Ind., Mich., Minn., Nebr., Kans.).
Hornbeam (Me., N. H., Mass., Conn., R. I., N. Y., N. J., Pa., Del., W. Va., N. C., S. C., Ala., La., Tex., Ky., Ill., Kans., Minn.).
Ironwood (Me., Vt., Mass., R. I., N. Y., N. J., Pa., Del., W. Va., N. C., S. C., Fla., Ala., La., Tex., Mo., Wis., Ill., Iowa, Kans., Minn., Ohio, Nova Scotia).
O-tan-tahr-te-weh = "A lean tree" (Indians, N. Y.).
American Hornbeam (Hort. and lit.).

OSTRYA Scopuli

Ostrya virginiana (Miller) Koch. — Hop-hornbeam.

RANGE.—From Cape Brenton Island and Bay of Chaleur (and along St. Lawrence and Lower Ottawa Rivers and over northern shores of Lake Huron) to western Ontario; south to northern Florida (near Jacksonville); westward to Manitoba, northern Minnesota, North Dakota, South Dakota (Black Hills), eastern and northern Nebraska, eastern Kansas, Arkansas, and Oklahoma; and eastern Texas.

NAMES IN USE

Hop-hornbeam (Vt., R. I., Mass., N. Y., N. J., Pa., Del., N. C., S. C., Ala., Tex., Ark., Ohio, Ill., Ind., Wis., Minn., Kans., Nebr., S. Dak.).
Ironwood (R. I., N. Y., N. J., Pa., Del., W. Va., N. C., S. C., Ala., La., Tex., Ark., Ky., Ohio, Ind., Ill., Iowa, Mich., Wis., Minn., S. Dak., Nebr., Ont.).
Leverwood (Vt., Mass., R. I., N. Y., Pa., Kans.).
Hornbeam (R. I., N. Y., Fla., S. C., La.).
Hardhack (Vt.).
American Hophornbeam (lit.).
Deerwood.

Ostrya virginiana glandulosa (Spach) Sargent.[50]

RANGE.—From Quebec and Ontario through western New England, western New York, and eastern Michigan; occurring also in New Jersey, Pennsylvania, Appalachian Mountains, northern Illinois, southwestern Missouri, and in Oklahoma.

NOTE ON NOMENCLATURE.—Formerly distinguished (in 1841) as *Ostrya Virginica α glandulosa* Spach.

Ostrya knowltonii Coville. — Western Hop-hornbeam.

RANGE.—Arizona (canyon of the Colorado River, 70 miles north of Flagstaff, where Tolfree P. O. is located. Abundant along the trail leading to the bottom of the canyon, at 6,000 to 7,000 feet elevation; in Oak Creek Canyon, 30 miles south of Flagstaff); Utah (Grant County, on Grand River—fide M. E. Jones).

NAMES IN USE

Knowlton Hop-hornbeam.
Western Hop-hornbeam.

BETULA Linnæus

*Betula lenta Linnæus. — Sweet Birch.

RANGE.—Southern Maine to northwestern Vermont, Michigan, Ohio, Kentucky, and Delaware, and in the eastern mountains to Georgia and Alabama.

[50] This form was neglected until 1919, when C. S. Sargent (Bot. Gaz., LXVII, 216, 1919) proposed to revive it under its present name. It seems possible that *Ostrya Baileyi* Rose of western Texas (Guadaloupe Mountains) is the same as this variety. Bailey's Hornbeam occurs as far east as Oklahoma.

NAMES IN USE

Sweet Birch (Me., N. H., Vt., Mass., R. I., N. Y., N. J., Pa., Del., S. C.).
Birch (N. C., trade).
Black Birch (N. H., Vt., Mass., R. I., Conn., N. Y., N. J., Pa., Va., W. Va., Ga., Ohio).
Cherry Birch (N. H., R. I., N. Y., Pa., Ky., Del., Va., N. C., S. C., Ga.).
River Birch.
Mahogany Birch (N. C., S. C.).
Mountain Mahogany (N. C., S. C.).
Mahogany (N. C.).
Spice Birch.

× Betula jackii Schneider. — Hybrid.

RANGE.—Known only in cultivation in the Arnold Arboretum, Jamaica Plain, Massachusetts.

NOTE ON NOMENCLATURE.—Believed to be a hybrid between *Betula lenta* Linnæus and *Betula pumila* Michaux.

* Betula lutea Michaux.[51] — Yellow Birch.

RANGE.—From Newfoundland and along the northern shores of St. Lawrence Gulf to Abitibi Lake and Rainy River; southward through northern Minnesota to Central Iowa, and through the Northern States to eastern Tennessee, western North Carolina, northern Georgia, and Delaware.

NAMES IN USE

Yellow Birch (Me., N. H., Vt., Mass., Conn., R. I., N. Y., N. J., Pa., N. C., S. C., Ill., Mich., Minn., Ont.).
Gray Birch (Vt., R. I., Pa., Mich., Minn.).
Swamp Birch (Minn.).
Silver Birch (N. H.).
Merisier (Quebec).
Merisier Rouge (Quebec).
White Birch (N. C.).
Birch (N. C., trade).
Witch Hazel (Newfoundland trade).

× Betula purpusii Schneider. — Hybrid.

RANGE.—Known now only from Michigan and Minnesota (Hennepin, Pine, and Anoka Counties).

NOTE ON NOMENCLATURE.—Supposed to be a hybrid between *Betula lutea* Michaux and *Betula pumila glandulifera* Regel.

*Betula nigra Linnæus. — River Birch.

RANGE.—Southern New Hampshire (Hillsborough County), northern Massachusetts, New York (Long Island) and southward east of the Alleghenies to western Florida; west in Gulf States to Texas (Brazos County), and north through Mississippi to Arkansas, eastern Oklahoma, eastern Kansas, eastern Iowa, southern Minnesota, southern Wisconsin (near Madison, and Germantown, Juneau County), and from Missouri, Tennessee, Kentucky, southern Illinois and Indiana, to southern Ohio.

NAMES IN USE

Red Birch (Mass., R. I., N. Y., N. J., Pa., Del., N. C., S. C., La., Mo., Wis., Kans., Nebr., Ohio).
River Birch (Mass., R. I., N. J., Del., Pa., Ala., Miss., Tex., Mo., Ill., Wis., Ohio).
Water Birch (W. Va., Kans.).
Black Birch (Fla., Tenn., Tex.).
Birch (N. C., S. C., Miss., La., trade).

[51] *Betula alleghanensis* Britton, in Britton and Shafer (North Am. Trees, 257, 1908) is maintained by these authors as a species, which is said to have been confused with *Betula lenta* and *Betula lutea*. In general appearance it very strongly resembles the latter species, but the scales of its mature fruit are distinctly of a different shape from those of *Betula lutea* Michaux. For the present the writer prefers to consider this tree a form of the latter species.

***Betula populifolia** Marsh. **Gray Birch.**

RANGE.—From Newfoundland, Nova Scotia, Prince Edward Island, New Brunswick and Lower St. Lawrence River southward (mostly in coast region) to northern Delaware; westward through northern New England and New York to Lake Ontario (southern shores), and Pennsylvania (Franklin County).

NAMES IN USE

White Birch (Vt., Mass., R. I., Conn., N. Y., N. J., Penn., Del., Ontario).
Gray Birch (Me., R. I., Mass.).
Old-field Birch.
Poverty Birch (Me.).
Poplar-leaved Birch.
Small White Birch (Vt.).
Wire Birch (Nova Scotia).
Pin Birch.
Broom Birch.

VARIETIES DISTINGUISHED IN CULTIVATION

Betula populifolia purpurea Ellwanger and Barry.

Betula populifolia laciniata Loudon.

Betula coerulea Blanchard. **Blueleaf Birch.**

RANGE.—Southern Vermont (Windham County, vicinity of Stratton and Windham); northern Maine (Aroostook County, on Haystack Mountain). Range imperfectly known at present; probably occurs throughout northern New England and in eastern Canada.

NAMES IN USE

Blue Birch (lit.).
Blueleaf Birch.

Betula coerulea blanchardii Sargent. **Blueleaf Birch.**

RANGE.—Southern Vermont (vicinity of Windham and Stratton) and eastern Maine (Washington County).

NAME IN USE

Blueleaf Birch

***Betula papyrifera** Marshall. **Paper Birch.**

RANGE.—From Labrador to Hudson Bay (southern shores); southward to New York (Long Island) and northern Pennsylvania, central Michigan, northern Indiana, northern Wisconsin, North Dakota, South Dakota (Black Hills), eastern Nebraska, and Wyoming.

NAMES IN USE

Paper Birch (N. H., Vt., Mass., R. I., Conn., N. Y., Wis., Mich., Minn., Ont.).
Canoe Birch (Me., Vt., N. H., R. I., Mass., N. Y., Pa., Wis., Mich., Minn., Ont., and Hort.).
White Birch (Me., N. H., Vt., R. I., N.Y., N. J., Wis., Minn., Mich., Nebr., Ont.).
Silver Birch (Minn.).
Large White Birch (Vt.).
Boileau (Quebec).
Birch (trade).

Betula papyrifera subcordata (Rydberg) Sargent. **Paper Birch.**

RANGE.—Montana and Idaho to Alberta and British Columbia, western Washington and northeastern Oregon.

NOTE ON NOMENCLATURE.—Formerly described as *Betula subcordata* Rydberg.

NAME IN USE

Paper Birch

Betula papyrifera cordifolia (Regel) Fernald. **Paper Birch.**

RANGE.—New England (High Mountains) and northward into Labrador and Newfoundland; occurring also, within the range of the species, in Wisconsin (Green Bay) and Minnesota (Cook County); North Carolina (Mount Mitchell).

NAME IN USE

Paper Birch

Betula papyrifera elobata (Fernald) Sargent. **Paper Birch.**

RANGE.—Quebec (headwaters of the Ruissieau a la Neige on Mt. Albert, Gaspe County.—M. L. Fernald).

NAME IN USE

Paper Birch

Betula papyrifera occidentalis (Hooker) Sargent.[52] **Western Paper Birch.**

RANGE.—Northwestern Washington and southwestern British Columbia, extending eastward in eastern Washington and northern Idaho, to northern Montana.

NOTE ON NOMENCLATURE.—Formerly designated as *Betula occidentalis* Hooker.

NAMES IN USE

Western Birch. Western Paper Birch.
Gray Birch.

Betula papyrifera montanensis (Butler) Sargent. **Western Paper Birch.**

RANGE.—Montana (Yellow Bay, Flathead Lake); Idaho (Sand Point, Bonner County).

NAME IN USE

Western Paper Birch

×Betula sandbergii Britton. **Hybrid.**

RANGE.—Southern Minnesota (Hennepin County).

NOTE ON NOMENCLATURE.—Supposed to be a hybrid between *Betula papyrifera* Marshall and *Betula pumila glandulifera* Regel.

***Betula kenaica** Evans. **Kenai Birch.**

RANGE.—Alaska (Kenai Peninsula from Cook Inlet to Lynn Canal).

NOTE ON NOMENCLATURE.—Designated by some authors as *Betula papyrifera* var. *kenaica* A. Henry.

NAMES IN USE

Red Birch. Kenai Birch.
Black Birch.

Betula neoalaskana Sargent. **Alaska White Birch.**

RANGE.—Alaska (Saskatchewan Valley to the Yukon River Valley). Said to occur also on the coast of Alaska.[53]

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[52] Formerly confused with the bronze-barked Rocky Mountain species, *Betula fontainlis* Sargent and *Betula papyrifera* Marshall, a form of which was thought to occur in Washington and British Columbia.

[53] Fide Britton and Shafer, North Am. Trees, 249, 1908.—*Betula commixta* Sargent, supposed to be a hybrid between *Betula neoalaskana* Sargent and *Betula glandulosa* Michaux, is a shrub occurring in the vicinity of Dawson, Yukon Territory (C. S. Sargent).

NOTE ON NOMENCLATURE.—Formerly designated as *Betula alaskana* Sargent (1901), not of Lesquereux (1883).

NAMES IN USE

Alaska Birch (lit.).
White Birch.
Alaska White Birch.
Yellow Birch.

Betula fontinalis Sargent.[54] **Red Birch.**

RANGE.—British Columbia (Upper Fraser River to Peace River) and southward to California (canyons about Mount Shasta and eastern slopes of the northern Sierras); eastward in Alberta and the valley of the Saskatchewan; southward in the Rocky Mountains through Nevada, Utah, northern New Mexico and Arizona, and Colorado (eastern base of Rockies); eastward to northwestern Nebraska and to South Dakota (Black Hills).

NOTE ON NOMENCLATURE.—Formerly included, in part, under *Betula occidentalis* Hooker, with which it was confused.

NAMES IN USE

Black Birch (Calif., Colo., Mont., Utah).
Red Canyon Birch.
Canyon Birch (Utah).
Water Birch (Colo., Mont.).
Sweet Birch and Cherry Birch (Idaho).
Western Birch and Mountain Birch (lit.).
Birch (Utah, Oreg., Calif.).
Swamp Birch (Mont.).
Western Red Birch.
Red Birch.

Betula fontinalis piperi (Britton) Sargent. **Red Birch.**

RANGE.—Eastern Washington (vicinity of Pullman and Almota, Whitman County, and of Spokane, Spokane County).

NOTE ON NOMENCLATURE.—Originally described as *Betula piperi* Britton.

NAME IN USE

Red Birch

Betula eastwoodæ Sargent.[55] **Alaska Red Birch.**

RANGE.—British Alaska (Yukon District, on Hunker Creek and in swamps about Dawson, valley of the Yukon River).

NAME IN USE

Alaska Red Birch

ALNUS Linnæus

Alnus sinuata (Regel) Rydberg.[56] **Sitka Alder.**

RANGE.—Northwest coast from Alaska (borders of the Arctic Circle) to California; eastward through British Columbia to Alberta; and through Washington and Oregon to Montana.

NOTE ON NOMENCLATURE.—Formerly designated as *Alnus sitchensis* (Regel) Sargent.

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[54] Britton and Shafer (North Am. Trees, 254, 1908) record in this sequence *Betula utahensis* Britton, the Utah Birch, which occurs, so far as is now known, only in the vicinity of Salt Lake, Utah, and is distinguished by the densely glandular, resinous, greenish brown young twigs, which later become bright brown and shining. I have not seen specimens of this birch, which is possibly a form or variety of *Betula fontinalis* Sargent.

[55] Macoun first collected specimens of this birch in 1902, and in 1914 Alice Eastwood found the tree, which is related to the shrubby *Betula glandulosa* Michaux.

[56] Britton and Shafer (North Am. Trees, 260, 1908) maintain this species under the name *Alnus fruticosa* Ruprecht, the belief of these authors being that the North American plant is not distinct from the Siberian species. The writer believes, however, that our alder is specifically distinct from the Asiatic plant.

NAMES IN USE

Northern Alder (lit.).
Mountain Alder (lit.).
Alder.
Sitka Alder.

***Alnus rubra** Bongard. **Red Alder.**

RANGE.—From southeastern Alaska (through islands and coast ranges of British Columbia, western Washington, and Oregon) to southern California (coast ranges to Santa Inez Mountains).

NOTE ON NOMENCLATURE.—Formerly designated as *Alnus oregona* Nuttall.

NAMES IN USE

Alder (Calif., Oreg.).
Red Alder (Calif., Oreg.).
Western or Red Alder.
Oregon Alder (lit.).

Alnus tenuifolia Nuttall. **Mountain Alder.**

RANGE.—From British Columbia (Francis Lake to Lower Fraser River) eastward in the valley of the Saskatchewan River to Prince Albert; southward through the Rocky Mountains to northern New Mexico.

NAMES IN USE

Mountain Alder (lit.).
Alder (Idaho).
Tag Alder (Utah).
Tree-Alder (lit.).
Paper-leaf Alder (lit.).

***Alnus rhombifolia** Nuttall. **White Alder.**

RANGE.—From northern Idaho to the eastern slope of the CascadeMountains of Washington and southeastern Oregon and southward through California (coast ranges, western slopes Sierra Nevada, and the San Bernardino, San Jacinto, and Cuyamaca Mountains).

NAMES IN USE

Alder (Calif., Oreg., Idaho).
Western or California Alder (Idaho).
Mountain Alder.
Rhombic-leaved Alder (lit.).
White Tree-Alder (lit.).
White Alder (lit.).

Alnus rhombifolia bernardina Munz & Johnston.

RANGE.—Southern California (San Bernardino County, Santa Ana River at junction of the South Fork, at elevations of from 5,000 to 7,000 feet). Distinguished by its small, heavily woolly, doubly toothed leaves.

Alnus oblongifolia Torrey. **Mexican Alder.**

RANGE.—Southern New Mexico and southern and northern Arizona (canyons of the Santa Catalina, Chiricahua, and Rincon Mountains); Oak Creek Canyon; northern Mexico.

NOTE ON NOMENCLATURE.—Formerly designated as *Alnus acuminata* Humboldt, Bonpland, and Kunth, which is a different species inhabiting Peru and Bolivia and extending northward to southern Mexico.

NAMES IN USE

Oblong-leafed Alder (lit.).
Alder.
Mexican Alder.
Lanceleaf Alder.

Alnus maritima (Marshall) Muehlenberg.[57] **Seaside Alder.**

RANGE.—Southern Delaware and Maryland (Nanticoke River near Seaford, Del.; Wicomico River near Salisbury, Md.); Oklahoma (valley of Red River in Johnson and Bryan Counties).

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[57] Britton and Shafer (North Am. Trees, 264, 1908) record *Alnus noveboracensis* Britton, New York Alder which occurs in southeastern New York, and, it is said, probably ranges north and south of this region. It is a small tree or shrub and when first discovered was supposed to be *Alnus incana* (Linnæus) Willdenow, which, as it occurs in northeastern North America and United States, is a shrub.

NAMES IN USE

Seaside Alder (Del.). Alder (Del.).

Alnus glutinosa (Linnæus) Gaertner. **European Black Alder.**

RANGE.—Europe and northern Asia, but sparingly naturalized in a few localities in eastern United States.

NOTE ON NOMENCLATURE.—Designated by some authors as *Alnus rotundifolia* Miller.

NAMES IN USE

European Black Alder. European Alder (lit.).

VARIETIES DISTINGUISHED IN CULTIVATION

Alnus glutinosa quercifolia Willdenow.
Alnus glutinosa laciniata (Ehrhart) Willdenow.
Alnus glutinosa incisa Willdenow.
Alnus glutinosa aurea (Koch) Nicholson.

Family FAGACEAE

FAGUS Linnæus

*** Fagus grandifolia** Ehrhart.[58] **Beech.**

RANGE.—New Brunswick to Lake Huron (north shores), Minnesota, and northern and east-central (Appleton) Wisconsin; south to western Florida, Missouri and eastern Texas (Trinity River).

NAMES IN USE

Beech (Me., N. H., Vt., Mass., R. I., Conn., N. Y., N. J., Pa., Del., Va., Tenn., W. Va., N. C., S. C., Ga., Ala., Fla., Miss., La., Tex., Ark., Ky., Mo., Ohio, Ill., Ind., Mich., Nebr., Minn., Ontario, trade).
Red Beech (Me., Vt., W. Va., Ky., Ohio, N. Y., Ontario).
White Beech (Me., N. Y., Ohio, Mich., W. Va.).
Ridge Beech (Ark.).
Winter Beech (W. Va.).
American Beech (lit. and hort.).
Stone Beech.

Fagus grandifolia caroliniana (Loudon) Fernald and Rehder. **Beech.**

RANGE.—From New Jersey and southern Ohio to Florida and westward to Texas, Arkansas, Oklahoma, and Missouri.

CASTANEA Adanson

***Castanea pumila** (Linnæus) Miller. **Chinquapin.**

RANGE.—From southern Pennsylvania (Adams, York, Franklin, and Cumberland Counties) and southern New Jersey to northern Florida and eastern Texas (Neches River); extending from Oklahoma and Arkansas to southwestern Missouri.

NAME IN USE

Chinquapin (Del., N. J., Pa., Va., W. Va., Tenn., N. C., S. C., Ga., Ala., Fla., Miss., La., Tex., Ark., Ohio, Ky., Mo., Mich.).

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[58] The synonymy of this species appears to have been involved in considerable uncertainty. According to a recognized rule of nomenclature, the oldest name (a trinomial) applied to the tree can not be taken up. During the last 25 years the following names and combinations have been applied: *Fagus Americana* Sweet (1826); *Fagus latifolia* (Muenchhausen) Loudon; *Fagus atropunicea* (Marshall) Sudworth; *Fagus ferruginea* Aiton (1789). The latter name is the one by which it was previously long known. *Fagus grandifolia* Ehrhart (1787) appears to be the oldest binomial applied to the American Beech and it should, therefore, be maintained.

Castanea ashei Sudworth.

RANGE.—Coast region from northeastern North Carolina to northern Florida, central Louisiana (vicinity of Urania, Winn Parish); probably extending into southeastern Texas.

NOTE ON NOMENCLATURE.—Formerly designated as *Castanea pumila ashei* Sudworth.

Castanea alnifolia floridana Sargent.[59]

RANGE.—North Carolina (New Hanover County—coast); Georgia (central-eastern border, Screven County); western Florida (southern-central border, in Bay and Duval Counties); central Alabama (Dallas County); southeastern Louisiana (St. Tammany Parish). Range imperfectly known at present.

NOTE ON NOMENCLATURE.—Designated also as *Castanea floridana* (Sargent) Ashe.

Castanea floridana margaretta Ashe.

RANGE.—North-central Alabama (possibly also extending into northeastern Georgia) and northeastern Texas to central and southwestern Arkansas.

NOTE ON NOMENCLATURE.—Originally described as *Castanea pumila Margaretta* Ashe. Includes *Castanea margaretta angustifolia* Ashe and *Castanea floridana angustifolia* Ashe (Bibb County, Alabama), and *Castanea Margaretta arcuata* Ashe (Hardin County, Texas).

Castanea ozarkensis Ashe.

RANGE.—Arkansas (north of the Arkansas River from Center Ridge) to southwestern Missouri (and westward to the valley of the White River); Arkansas and Oklahoma (Rich Mountain).

NOTE ON NOMENCLATURE.—Includes *Castanea arkansana* Ashe (Bull. Forr. Bot. Club, vol. 50, 361, 1923).

Castanea alabamensis Ashe.

RANGE.—Northwestern Alabama (region between Blount, Lawrence, and Marion Counties).

***Castanea dentata** (Marshall) Borkhausen. **Chestnut.**

RANGE.—From southern Maine to northwestern Vermont (Winooski River), Southern Ontario, and southern shores of Lake Ontario to southern Michigan; southward to Delaware and Ohio, southern Indiana and Illinois (Pulaski County), and on the Appalachian Mountains to central Kentucky and Tennessee, northern Georgia, western Florida, central Alabama, and Mississippi.

NAMES IN USE

Chestnut (Me., N. H., Vt., Mass., R. I., Conn., N. Y., N. J., Pa., Del., Md., Va., W. Va., N. C., Tenn., Ga., Ala., Miss., Ky., Mo., Mich., Ontario).

O-heh-yah-tah="Prickly Bur" (Indians, N. Y.).

American Chestnut (lit. and hort.).

Sweet Chestnut (lit.).

×Castanea neglecta Dode. **Hybrid**

RANGE.—Western North Carolina (vicinity of Highlands, Macon County).

NOTE ON NOMENCLATURE.—Believed to be a hybrid between *Castanea dentata* (Marshall) Borkhausen and *Castanea pumila* Miller.

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[59] *Castanea alnifolia* Nuttall, of which this form is a variety, is a shrubby species, the present variety differing from it chiefly in its arborescent habit.

CASTANOPSIS Spach

***Castanopsis chrysophylla** (Hooker) A. de Candolle. **Golden Chinquapin.**

RANGE.—Pacific coast region from the Columbia River (along western slopes of Cascade Mountains and Sierra Nevada) to southern California (San Jacinto Mountains).

NAMES IN USE

Chinquapin (Calif., Oreg.).
Chestnut (Calif.).
Western Chinquapin.
Golden-leaved Chestnut (lit.).
Golden Chinquapin.

LITHOCARPUS Blume

(= PASANIA Örsted)

***Lithocarpus densiflora** (Hooker and Arnott) Rehder.[60] **Tan Oak.**

RANGE.—Southern Oregon (Umpqua River) and southward through California (coast ranges to Santa Inez Mountains—east of Santa Barbara, and western slopes of the Sierra Nevada to Mariposa County).

NOTE ON NOMENCLATURE.—Formerly designated as *Quercus densiflora* Hooker and Arnott, and as *Pasania densiflora* (Hooker and Arnott) Örsted. The genus *Lithocarpus* of Blume is much older than the genus *Pasania* of Örsted and, therefore, should replace the latter generic name.

NAMES IN USE

Tanbark Oak (Calif.).
Chestnut Oak (Calif.).
California Chestnut Oak (Oreg.).
Peach Oak (Oreg.).
Live Oak (Oreg.).
Tan Oak.

QUERCUS Linnæus

***Quercus borealis** Michaux f.[61] **Red Oak.**

RANGE.—From Nova Scotia and southern New Brunswick through Quebec and along the north shores of Lake Huron to near Lake Namekagon; south to northern New England, western New York and Pennsylvania (Erie County), central Minnesota, southern Wisconsin, Iowa, Arkansas (Ozark National Forest—Johnson, Van Buren, and Newton Counties—W. W. Ashe), and northern Michigan; and in the mountains to North Carolina and probably eastern Tennessee.[62]

NOTE ON NOMENCLATURE.—Formerly designated as *Quercus rubra* Linnæus.

NAMES IN USE

Gray Oak (lit.).
Red Oak.
Canadian Red Oak (trade).
Northern Red Oak (lit.).

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[60] W. L. Jepson (Silva of Calif., 237, 1910) has characterized a form of this species as *Pasania densiflora* Örsted, forma *lanceolata* Jepson, which occurs in Mendocino and Del Norte Counties, Calif. *Pasania densiflora echinoides* (R. Br. Campst.) Jepson, is a shrub, occurring from Mount Shasta to the Klamath Range and through the Siskiyou Mountains to southwestern Oregon. This variety was formerly designated as *Quercus densiflora echinoides* (R. Br. Campst.) Sargent. = *Lithocarpus densiflora echinoides* (R. Br. Campst.) Abrams.

[61] As the name *Quercus rubra* Linnæus is now properly applied to the tree formerly called *Quercus falcata* and *Quercus digitata*, it becomes necessary, as shown by C. S. Sargent (Rhodora, vol. 15, p. 39, 1915; vol. 18, pp. 45–48, 1916), to take up for the species, long known as a far northern form of the Red Oak, the name *Quercus borealis* Michaux fils. Michaux fils originally described this oak as *Quercus ambigua* (Histoire des Arbres forestières de l'Amérique septentrionale, II, 120, pl. 24, 1812). Later discovering, as seems to be shown in the English translation of the French edition of Michaux's book, that Humboldt and Bonpland had previously used the name *Quercus ambigua* for a Mexican oak, Michaux appears to have substituted in the English edition *Quercus borealis* for *Quercus ambigua*. The common name Michaux applied to *Quercus borealis* is "Gray Oak," but as this name is now generally unknown, and as the tree is the most northern form of the Red Oak, an appropriate common name for it would be Red Oak

[62] C. S. Sargent (l. c.) states that a specimen of *Quercus borealis* was collected in St. Tammany Parish, La.

×Quercus hawkinsii Sudworth. **Hawkins Oak (Hybrid).**

RANGE.—Western Tennessee (vicinity of Huntingdon, Carroll County, on the estate of Eugene Hawkins. The single large tree now known was discovered in 1912 by Mrs. Hawkins).

NOTE ON NOMENCLATURE.—Supposed to be a hybrid between *Quercus borealis maxima* (Marshall) Ashe and *Quercus velutina* La Marck.

NAME IN USE

Hawkins Oak

×Quercus lowellii Sargent. **Hybrid.**

RANGE.—Southwestern Maine (Seabury, York County). A single tree is now known.

NOTE ON NOMENCLATURE.—Supposed to be a hybrid between *Quercus borealis* Michaux and *Quercus ilicifolia* Wangenheim.

***Quercus borealis maxima** (Marshall) Ashe. **Red Oak.**

RANGE.—Northern range not fully determined. To be looked for in the general region from western New York and Pennsylvania westward through Ohio, and southern Michigan and southward to Georgia, Tennessee, Alabama, and Mississippi to Arkansas and Oklahoma (Rich Mountain); westward to eastern Nebraska and central Kansas.

NOTE ON NOMENCLATURE.—The common large-fruited form of Red Oak formerly included under *Quercus rubra* Linnæus.

NAMES IN USE

Red Oak (eastern United States).
Black Oak (Vt., Conn., N. Y.).
Spanish Oak (N. C., Pa., Mo., Ga.).
Mountain Oak (N. C., Tenn.).
Water Oak (N. C., Tenn., W. Va.).
Buck Oak (N. C.).
Spotted Oak (N. C., Tenn.).
Leopard Oak (lit.).
West Virginia Soft Red Oak (trade).
Common Red Oak (lit. and hort.).
Maine Gray Oak (trade).

×Quercus porteri Trelease. **Hybrid.**

RANGE.—Massachusetts (Suffolk County); Pennsylvania (Northampton County); Ohio (Franklin County).

NOTE ON NOMENCLATURE.—Supposed to be a hybrid between *Quercus borealis maxima* (Marshall) Ashe and *Quercus velutina* La Marck.

×Quercus runcinata (A. de Candolle) Engelmann.[63] **Hybrid.**

RANGE.—Missouri (vicinity of St. Louis, Independence, and Williamsville); Illinois (Richland and Wayne Counties).

***Quercus palustris** Muenchhausen. **Pin Oak.**

RANGE.—Western Massachusetts (Connecticut River) and Connecticut; western New York (Grand Island—Niagara River) to southern Ontario and southern Michigan (Washtenaw, Macomb, and Ottawa Counties), westward to Iowa (Muscatine County); southeastern Nebraska (Pawnee County, near Table Rock); south to Maryland, Virginia (Lower Potomac River), North Carolina, southern Kentucky, central Tennessee, southern Arkansas, and northeastern Oklahoma.

[63] *Quercus runcinata* (A. de Candolle) Engelmann, which was discovered in the Mississippi River bottom opposite St. Louis, is probably a hybrid between *Quercus borealis maxima* (Marshall) Ashe, and *Quercus imbricaria* Michaux.

NAMES IN USE

Pin Oak (Mass., Conn., R. I., N. Y., Pa., Del., Va., Md., Ark., Mo., Ill., Wis., Iowa, Kans.).
Swamp Spanish Oak (Ark., Kans.).
Water Oak (R. I., Ill.).
Swamp Oak (Pa., Ohio).
Water Spanish Oak (Ark.).
Red Oak (trade, in part).

× Quercus richteri Baenitz. **Hybrid.**

RANGE.—All that is now known of this oak is that it was found in cultivation at Breslau, Silesia. (Trelease).

NOTE ON NOMENCLATURE.—Supposed to be a hybrid between *Quercus palustris* Muenchhausen and *Quercus borealis maxima* (Marshall) Ashe.

Quercus georgiana M. A. Curtis. **Georgia Oak.**

RANGE.—Central Georgia (Stone Mountain, Little Stone Mountain, 9 miles south of Stone Mountain, and other granite hills 12 to 18 miles eastward in Dekalb County); also in Jackson, Polk, and Meriwether Counties).

NAME IN USE

Georgia Oak

× Quercus smallii Trelease. **Hybrid.**

RANGE.—Central Georgia (Stone Mountain, Dekalb County).

NOTE ON NOMENCLATURE.—Formerly designated as *Quercus georgiana × marilandica* Sargent. Supposed to be a hybrid between *Quercus georgiana* M. A. Curtis and *Quercus marilandica* Muenchhausen.

Quercus texana Buckley. **Texas Red Oak.**

RANGE.—Central and western Texas to the Edwards Plateau.

NAMES IN USE

Red Oak (Tex., trade—in part).
Spotted Oak (Tex.).
Spanish Oak (Tex.).
Texas Red Oak.

Quercus texana stellapila Sargent. **Texas Red Oak.**

RANGE.—Southwestern Texas (Sproul's Ranch—above Fort Davis, Jeff Davis County).

NAME IN USE

Texas Red Oak

*** Quercus shumardii** Buckley.[64] **Shumard Red Oak.**

RANGE.—Eastern Texas to Kansas, northern Missouri, Iowa (Fayette County), southern Illinois, southern Indiana, western Ohio, southern Michigan (Jackson County), and through the Gulf and South Atlantic States to North Carolina; Maryland (Calvert County).

NOTE ON NOMENCLATURE.—Formerly designated as *Quercus texana* Sargent (in part), not of Buckley.

NAME IN USE

Shumard Red Oak

[64] Buckley (fide Sargent) described this tree under its present name in 1860, and in 1881 as *Quercus rubra* var. *texana*. It is a larger tree similar in its usually larger leaves to those of *Quercus texana* Buckley and in its acorns to *Quercus borealis* Michaux (= *Quercus rubra* of authors, not *Quercus rubra* Linnæus).

Quercus shumardii schneckii (Britton) Sargent. **Schneck Red Oak.**

RANGE.—Within the range of *Quercus shumardii* Buckley and said to be abundant in eastern Texas and in the valley of the Mississippi River to Alabama, Tennessee, and Kentucky; southwestern Arkansas (Hempstead and Miller Counties) and southeastern Oklahoma (Rich Mountain).

NOTE ON NOMENCLATURE.—Formerly designated as *Quercus texana* Sargent (in part), not Buckley, and as *Quercus schneckii* Britton.

NAMES IN USE

Schneck's Oak.
Schneck's Red Oak (Tex.).
Spotted Oak (Tex.).
Spotted Bark (Tex.).
Southern Red Oak (Tex.).

Quercus gravesii Sudworth.[65] **Graves Oak.**

RANGE.—Southwestern Texas (Chisos Mountains, lower rocky slopes, Brewster County; also in Davis Mountains, Jeff Davis County).

NAME IN USE

Graves Oak

*** Quercus ellipsoidalis** E. J. Hill. **Jack Oak.**

RANGE.—Southeastern Minnesota (Cass, Crow-Wing, and Hennepin Counties); Wisconsin (Bayfield, Forest, Washburn, Oneida, Marinette, Kewaunee, St. Croix, Brown, Waupaca, Winnebago, Juneau, Sauk, Dane, and Milwaukee Counties); Iowa (Fayette, Mitchell, Black Hawk, Hardin, Boone, Story, Jackson, and Clinton Counties); Illinois (Jo Daviess, Stephenson, Whiteside, Lee, Ogle, Winnebago, McHenry, Lake, Cook, where it is abundant, and Will Counties); Indiana (Lake County); Michigan (Ionia, Crawford, and Washtenaw Counties).

NAMES IN USE

Black Oak (Ill.).
Jack Oak (lit.).
Yellow Oak (Ill.).
Pin Oak (Wis.).
Hill's Oak (lit.).
Northern Pin Oak (lit.).

× Quercus palaeolithicola Trelease. **Hybrid.**

RANGE.—Within the range of the supposed parents.

NOTE ON NOMENCLATURE.—Believed to be a hybrid between *Quercus ellipsoidalis* E. J. Hill and *Quercus velutina* La Marck.

*** Quercus coccinea** Muenchhausen. **Scarlet Oak.**

RANGE.—From Maine (Androscoggin River) through southern New Hampshire and Vermont and central New York to southern Ontario; west through central Michigan and southern Wisconsin to Missouri; eastern Oklahoma; south to the District of Columbia, Indiana, Illinois, and on the Allegheny Mountains to Kentucky, Tennessee, and Georgia.

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[65] Discovered by the writer in November, 1913, on the lower rocky slopes of the Chisos Mountains, Brewster County, southwestern Texas, where it is a small or medium-sized tree. In November, 1920, the writer found a single tree in the Davis Mountains (Olympia Canyon) a few miles north of Fort Davis, while in November, 1921, R. A. Epperson and the writer found this oak growing abundantly in a tributary canyon of Olympia Canyon. Further explorations will doubtless show a wider occurrence of this oak in the Davis Mountains. So far the writer has been unable to find it in the Chinati Mountains. Specimens of this tree sent to C. S. Sargent led him to believe it to be a varietal form of *Quercus texana* Buckley, and in 1918 it was described as *Quercus texana* var. *chisosensis* Sargent. However, a careful field study of this oak convinces the writer that it is specifically distinct from *Quercus texana* Buckley, and I now propose for it the name *Quercus gravesii* = *Quercus texana* var. *chisosensis* Sargent (Bot. Gaz., LXV, 423, 1918) in honor of Henry S. Graves, formerly Director of the United States Forest Service, who throughout his connection with the Federal Government's forest work has been a staunch friend and supporter of dendrological investigations.

NAMES IN USE

Scarlet Oak (Vt., Mass., R. I., Conn., N. Y., N. J., Pa., Md., Del., N. C., Mo., Ill., Ind., Wis., Minn., Mich., Nebr., Iowa, Ontario).
Red Oak (Ky., N. C., Ala., Wis., Nebr., Minn.).
Black Oak (Mo., Ill., Iowa, Wis.).
Spanish Oak (N. C., Southern States).
Span Oak (Md.).
Buck Oak (Tenn.).
Bastard Oak (Va.).
Spotted Oak (Tenn., Ky.).

Quercus coccinea tuberculata Sargent.[66] **Scarlet Oak.**

RANGE.—Massachusetts to Georgia; Alabama (vicinity of Berlin, Dallas County).

NAME IN USE

Scarlet Oak

×Quercus benderi Baenitz. **Hybrid.**

RANGE.—Known only from a tree found in Massachusetts (vicinity of Boston—Blue Hills Reservation).

NOTE ON NOMENCLATURE.—Supposed to be a hybrid between *Quercus coccinea* Muenchhausen and *Quercus borealis maxima* (Marshall) Ashe.

×Quercus robbinsii Trelease. **Hybrid.**

RANGE.—Massachusetts (near North Easton, Bristol County).

NOTE ON NOMENCLATURE.—Supposed to be a hybrid between *Quercus coccinea* Muenchhausen and *Quercus ilicifolia* Wangenheim.

***Quercus velutina** La Marck. **Black Oak.**

RANGE.—From southern Maine (coast) to northern Vermont, southern and western Ontario, southern Michigan, Iowa, southeastern Nebraska; south to western Florida, and west to eastern Kansas, Arkansas, Oklahoma, and eastern Texas (Brazos River).

NAMES IN USE

Black Oak (Vt., Mass., R. I., N. Y., N. J., Pa., Del., Md., Va., W. Va., N. C., S. C., Ga., Ala., Fla., Miss., La., Tex., Ohio, Ill., Iowa, Kans., Mo., Nebr., Mich., Wis., Minn., Ontario).
Quercitron Oak (Del., S. C., La., Kans., Minn.).
Yellow Oak (R. I., N. Y., Ill., Tex., Kans., Minn.).
Tanbark Oak (Ill.).
Yellow-barked Oak (Minn.).
Spotted Oak (Mo.).
Yellow-bark (R. I.).
Dyer's Oak (Tex.).
Black Jack (Ga.).
Redbush (Ga.).
Red Oak (N. C., Tenn., Ky., Ala., La., trade—in part).
Jack Oak (Iowa).

Quercus velutina missouriensis Sargent.[67] **Black Oak.**

RANGE.—Western Missouri to northwestern and southwestern Arkansas and Oklahoma (Rich Mountain).

NAME IN USE

Black Oak

Quercus leiodermis Ashe. **Smooth-bark Oak.**

RANGE.—Missouri (Hills south of Kansas City); possibly also extending into northwestern Illinois.

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[66] Distinguished from the species by its larger acorns, the cup scales of which are much thickened below the middle of the cup, while the thin upper row of scales forms a distinct marginal ring. Otherwise similar to the species (Sargent). Known now in Indiana, Illinois, Tennessee, Alabama, and Missouri.

[67] C. S. Sargent, Man. Trees of North Am., 239, ed. 1, 1905. Mature leaves stellate-pubescent above and rusty-pubescent below and on the leaf stems and season's twigs.

NAMES IN USE

Smooth-bark Oak.
Slick-bark Oak.
Slick Oak.

*Quercus kelloggii Newberry. California Black Oak.

RANGE.—From western Oregon (McKenzie River) to the southern boundary of California (through coast mountains and on western slopes of Sierra Nevada, San Bernardino, San Jacinto, and Cuyamaca Mountains); also on foothills east side of the Sierras, along Owen's Valley.

NOTE ON NOMENCLATURE.—Formerly designated as *Quercus californica* (Torrey) Cooper.

NAMES IN USE

Black Oak (Calif., Oreg.).
Mountain Black Oak (Calif.).
Kellogg's Oak (Calif.).
California Black Oak (Calif.).

*Quercus catesbaei Michaux. Turkey Oak.

RANGE.—In coastal plain region from southeastern Virginia (R. M. Harper) to Florida (Cape Malabar and Peace River) and west to eastern Louisiana.

NAMES IN USE

Turkey Oak (Fla., Ga., Ala., Miss., La., Ky.).
Scrub Oak (N. C., S. C., Fla., Miss.).
Black Jack (S. C.).
Barren Scrub Oak.
Forked-leaf Black Jack (N. C., S. C.).
Sand Jack.
Sand Black Jack Oak (N. C.).
Blackjack Oak (Fla.).

×Quercus ashei Trelease. Hybrid.

RANGE.—Georgia (Charlton and Camden Counties).

NOTE ON NOMENCLATURE.—Supposed to be a hybrid between *Quercus catesbaei* Michaux and *Quercus cinerea* Michaux=*Quercus brevifolia* (La Marck) Sargent.

×Quercus mellichampii Trelease.[68] Hybrid.

RANGE.—South Carolina (near Buffton).

NOTE ON NOMENCLATURE.—Formerly designated as *Quercus catesbaei*×*laurifolia* Engelmann, which by some authors was considered the same as *Quercus sinuata* Walter; it may also be a hybrid between *Quercus catesbaei* Michaux and *Quercus laurifolia* Michaux.

NAME IN USE

Silver Oak (lit.)

×Quercus blufftonensis Trelease. Hybrid.

RANGE.—South Carolina (vicinity of Bluffton).

NOTE ON NOMENCLATURE.—Supposed to be a hybrid between *Quercus catesbaei* Michaux and *Quercus rubra* Linnæus.

×Quercus walteriana Ashe. Hybrid.

RANGE.—Coast region of South Carolina and Georgia; North Carolina (Sampson County); Florida (Duval County); Alabama (Mobile and Dallas Counties).

NOTE ON NOMENCLATURE.—Supposed to be a hybrid between *Quercus catesbaei* Michaux and *Quercus nigra* Linnæus.

[68] According to C. S. Sargent, three other trees, evidently of the same parentage, occur in the town of San Mateo, Putnam County, and in the vicinity of Orlando, Orange County, Fla. At the latter station this tree is locally called "Silver Oak," from the whitish bark of the upper stem and branches. The tree originally described by Engelmann has since been destroyed.

Quercus ilicifolia Wangenheim. **Bear Oak.**

RANGE.—From eastern Maine (Mount Desert Island off the coast) through eastern and southern New England; in New York (Lake George and valley of Hudson River); New Jersey (pine barrens); eastern Pennsylvania and along the Allegheny Mountains (east in Maryland to Montgomery County) to northwestern North Carolina (King Mountains and Crowders).

NOTE ON NOMENCLATURE.—Formerly designated as *Quercus pumila* (Marshall) Sudworth, and as *Quercus nana* Sargent.

NAMES IN USE

Bear Oak.
Barren Oak (Md.).
Dwarf Black Oak.
Scrub Oak.
Black Scrub Oak.

×Quercus rehderi Trelease. **Hybrid.**

RANGE.—Southern Massachusetts; possibly also in New Jersey.

NOTE ON NOMENCLATURE.—Supposed to be a hybrid between *Quercus ilicifolia* Wangenheim and *Quercus velutina* La Marck.

×Quercus giffordii Trelease. **Hybrid.**

RANGE.—New Jersey (Mays Landing).

NOTE ON NOMENCLATURE.—Supposed to be a hybrid between *Quercus ilicifolia* Wangenheim and *Quercus phellos* Linnæus.

***Quercus rubra** Linnæus.[69] **Southern Red Oak.**

RANGE.—From southeastern Pennsylvania and southern New Jersey to central Florida and in the Gulf States to eastern Texas (Brazos River), Oklahoma and Arkansas, southeastern Missouri to middle Tennessee and Kentucky, southern Illinois and Indiana, Ohio (Lawrence County), and West Virginia (Kenawha County).

NOTE ON NOMENCLATURE.—Formerly designated as *Quercus digitata* (Marshall) Sudworth.

NAMES IN USE

Spanish Oak (Del., Md., Va., N. C., S. C., Ala., Fla., Miss., La., Tex., Mo., Ill.).
Finger Oak (N. C.).
Red Oak (N. C., Va., Tenn., Ky., Ga., Fla., Ala., Miss., La., Ark., trade—in part).
Spanish Water Oak (La.).
Spotted Oak (Ga.).
Turkey Oak (N. C., Ky., Tenn., Ga.).
Bastard Spanish Oak (Ky.).
Scarlet Oak (Ky., N. C.).
Hill Red Oak (La.).
Southern Red Oak.

Quercus rubra triloba (Michaux) Ashe. **Southern Red Oak.**

RANGE.—Now known to occur near Pleasant Grove, Lancaster County, Pa., Jefferson County, Ind.; and southward to Florida, southern Alabama and Mississipi, Arkansas, and eastern Texas;[70] near Milledgeville, central Georgia. Further investigations are likely to increase the range of this variety.

NAME IN USE

Southern Red Oak

[69] C. S. Sargent has pointed out (Rhodora, vol. 15, p. 39, 1915; vol. 18, pp. 45–48, 1916) that examination of Linnæus' type specimen of his *Quercus rubra* shows it to be the tree we have been calling Spanish Oak [*Quercus falcata* Michaux and *Quercus digitata* (Marshall) Sudworth]. The latter oak must, therefore, be called *Quercus rubra* Linnæus. Notwithstanding the fact that this oak has long been known in the books as Spanish Oak, foresters and other field observers have constantly heard settlers and woodsmen call this tree "Red Oak," for which there now appears to be a good reason. It seems advisable, therefore, to discard the name "Spanish Oak," and to take up Southern Red Oak.

[70] Range, fide C. S. Sargent.

***Quercus rubra pagodæfolia** (Elliott) Ashe. **Swamp Red Oak.**

RANGE.—From Maryland (Queen Annes County) and southern Virginia to northern Florida, and westward in the Gulf States and Arkansas to southern Missouri, Texas (San Jacinto and Trinity Rivers), western Tennessee and Kentucky, southern Illinois and Indiana.

NOTE ON NOMENCLATURE.—Formerly considered specifically distinct from *Quercus rubra* Linnæus, when it was designated as *Quercus pagodæfolia* (Elliott) Ashe.

NAMES IN USE

Red Oak (N. C. trade, in part).
Swamp Spanish Oak (lit.).
Spanish Oak (N. C.).
Swamp Red Oak.

Quercus rubra leucophylla Ashe.[71] **Swamp Red Oak.**

RANGE.—Occurs in the coast region of Virginia and southward to northern Florida and westward in the Gulf States to eastern Texas and northward to northern Arkansas; southern Illinois and Indiana.

NAME IN USE

Swamp Red Oak

×Quercus sudworthii Trelease. **Hybrid.**

RANGE.—Known only from specimens collected in 1888 by D. M. Coffman from a tree growing near Covington, Tennessee.

NOTE ON NOMENCLATURE.—Formerly designated as *Quercus digitata×velutina* Sudworth, and supposed to be a hybrid between *Quercus rubra* Linnæus and *Quercus velutina* La Marck. *Quercus willdenoviana* Zabel, believed in Europe (Fide C. S. Sargent) to be a hybrid between *Quercus rubra* Linnæus and *Quercus velutina* La Marck, is apparently this form.

×Quercus ludoviciana Sargent. **Hybrid.**

RANGE.—One tree now known was discovered in Peteville, 10 miles west of Opelousas, St. Landry Parish, La.[72]

NOTE ON NOMENCLATURE.—Believed to be a hybrid between *Quercus rubra pagodæfolia* (Elliott) Ashe and *Quercus phellos* Linnæus.

***Quercus marilandica** Muenchhausen. **Blackjack Oak.**

RANGE.—From New York (Forbells Landing and Pine Island, Long Island) through northern Ohio, Indiana, Illinois, and southern Michigan (Ann Arbor and Lansing) to southeastern Nebraska, central Kansas, Missouri, Arkansas, and Oklahoma; south to Florida and west to Texas (Callahan County).

NOTE ON NOMENCLATURE.—Formerly designated as *Quercus nigra* of authors, not of Linnæus.

NAMES IN USE

Black Jack (Pa., Del., Md., W. Va., Ky., N. C., S. C., Ga., Ala., Miss., La., Tex., Ark., Mo., Ill., Ind., Kans., Nebr., Mich., Iowa, S. Dak.).
Jack Oak (N. Y., W. Va., Miss., Tex., Mo., Iowa, Ohio, Ill., Kans., Nebr.).
Iron Oak (Tenn.).
Black Oak (Ark., Wis., N. C., Okla.).
Barren Oak (Kans., Tenn., Iowa).
Barrens Oak (Fla.).
Scrub Oak (S. C.).
Ridge Oak (Ky.).
Black Jack Oak (N. C.).

Quercus marilandica ashei Sudworth. **Blackjack Oak.**

RANGE.—Central Texas through middle Oklahoma to central Kansas (Riley County).

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[71] Formerly considered an extreme form of *Quercus rubra pagodæfolia* (Elliott) Ashe, from which it differs in the distinctly different shape of the leaves in the upper and lower parts of the crown.

[72] Fide C. S. Sargent.

NAME IN USE

Blackjack Oak

×Quercus brittonii Davis. **Hybrid.**

RANGE.—New York (Watchogue, Staten Island); New Jersey (vicinity of Ocean Grove).

NOTE ON NOMENCLATURE.—Supposed to be a hybrid between *Quercus marilandica* Muenchhausen and *Quercus ilicifolia* Wangenheim.

×Quercus bushii Sargent. **Hybrid.**

RANGE.—Occurs in Oklahoma (Creek County); Mississippi (Lafayette County); Alabama (Houston, Dallas, and Baldwin Counties); Florida (Levy County); and Georgia (Decatur County).

NOTE ON NOMENCLATURE.—Formerly designated as *Quercus marilandica*×*velutina* Bush, which are believed to be its parents.

×Quercus hastingsii Sargent.[73] **Hybrid.**

RANGE.—Central Texas (near Boerne, Kendall County, and at Brownwood, Brown County).

NOTE ON NOMENCLATURE.—Supposed to be a hybrid between *Quercus marilandica* Muenchhausen and *Quercus texana* Buckley.

×Quercus tridentata (de Candolle) Engelmann. **Hybrid.**

RANGE.—Missouri (near St. Louis and Allenton; trees now destroyed) and southern Michigan (near Ann Arbor, Washtenaw County; trees now destroyed); southern Illinois (vicinity of Olney).

NOTE ON NOMENCLATURE.—Supposed to be a hybrid between *Quercus marilandica* Muenchhausen and *Quercus imbricaria* Michaux.

×Quercus caroliniensis Trelease. **Hybrid.**

RANGE.—North Carolina (Craven County); Georgia (Telfair and Decatur Counties); Texas (Hardin County).

NOTE ON NOMENCLATURE.—Supposed to be a hybrid between *Quercus marilandica* Muenchhausen and *Quercus cinerea* Michaux.

×Quercus sterilis Trelease. **Hybrid.**

RANGE.—North Carolina (Bladen County), and possibly to be looked for in Virginia.

NOTE ON NOMENCLATURE.—Supposed to be a hybrid between *Quercus marilandica* Muenchhausen and *Quercus nigra* Linnæus.

×Quercus rudkinii Britton. **Hybrid.**

RANGE.—New York (Long Island) and New Jersey (Keyport). Probably elsewhere in the Atlantic Region.

NOTE ON NOMENCLATURE.—Supposed to be a hybrid between *Quercus marilandica* Muenchhausen and *Quercus phellos* Linnæus.

***Quercus nigra** Linnæus. **Water Oak.**

RANGE.—Southern Delaware to Florida (Indian River and Tampa Bay); west to the Appalachian Mountains and through the Gulf States to Texas (Colorado River); through Arkansas and eastern border of Oklahoma to southeastern Missouri (Black River), middle Tennessee, and Kentucky.

NOTE ON NOMENCLATURE.—Formerly designated as *Quercus aquatica* Walter.

[73] Excepting in its somewhat shallower lobes, the foliage of this recently discovered hybrid resembles that of *Quercus texana* Buckley, while in the wide woolly scales of the cups and in the woolly twigs the influence of *Quercus marilandica* Muenchhausen is clearly shown. First discovered by S. H. Hastings in 1910 near Boerne (Sargent).

NAMES IN USE

Water Oak (Del., N. C., S. C., Ala., Fla., Miss., La., Tex., Ark., Mo.).
Spotted Oak (Tex., Ala.).
Duck Oak.
Possum Oak.
Punk Oak.
Red Oak (trade, in part).
Pin Oak (Miss., La., Fla.).

× Quercus demarei Ashe. **Hybrid.**

RANGE.—Arkansas (vicinity of Conway, Faulkner County).

Quercus nigra tridentifera Sargent.[74] **Water Oak.**

RANGE.—Southwestern Virginia to central Alabama, western Mississippi (near Natchez, Adams County; near Jackson, Hinds County); and eastern Louisiana; Texas (on the Navided River, Lavaca County).

NOTE ON NOMENCLATURE.—Later study is likely to show that the above-named variety should be designated as *Quercus nigra elongata* (Aiton) Ashe (Bull. Torr. Bot. Cl., XLIX, 268, 1922).

NAME IN USE

Water Oak

× Quercus neopalmeri Sudworth. **Hybrid.**

RANGE.—A single tree now known, is growing on the banks of a creek a few miles from McNab, Hempstead County, Arkansas.

NOTE ON NOMENCLATURE.—It is the *Quercus nigra* × *Shumardii* of E. J. Palmer, who supposes it to be a hybrid of these two oaks.

Quercus arkansana Sargent. **Water Oak.**

RANGE.—Southwestern Arkansas (vicinity of Fulton and several miles north of the latter town).[75]

NAMES IN USE

Arkansas Oak (lit.). Water Oak.

Quercus arkansana caput-rivuli Ashe.

RANGE.—Georgia (Clay County); Alabama (Pike County); Florida (vicinity of Crestview).

NOTE ON NOMENCLATURE.—First described as a hybrid, × *Quercus caput-rivuli* Ashe.

× Quercus venulosa Ashe. **Hybrid.**

RANGE.—Florida (vicinity of Turkey Creek, Okaloosa County).

NOTE ON NOMENCLATURE.—Supposed to be a hybrid between *Quercus arkansana caput-rivuli* Ashe and *Quercus cinerea* Michaux.

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[74] A dwarf form of this variety now designated as *Quercus nigra tridentifera*, forma *microcarya* (Small) Sargent, and formerly called *Quercus microcarya* Small, occurs in dry rocky soil on Little Stone Mountain, Dekalb County, Georgia.

[75] C. S. Sargent suggests that an oak found by Chas. Mohr in 1880 in Alabama on the Conicuh River may be of this species. Dr. Mohr believed it to be a hybrid between *Quercus nigra* Linnæus and *Quercus marilandica* Muenchhausen. Prof. Trelease now believes (fide letter to the author, Sept. 17, 1921, that his × *Quercus sterilis* is the same as the above species, in which case the latter name becomes a synonym of *Quercus arkansana* Sargent, the range of which would become considerably extended.

Quercus obtusa Ashe.[76] **Water Oak.**

RANGE.—Virginia (Dismal Swamp) and southward to Florida and westward to eastern Texas (Brazos River), in Louisiana extending north of the Red River.
NOTE ON NOMENCLATURE.—Formerly designated as *Quercus rhombica* Sargent.

NAMES IN USE

Diamond-leaf Water Oak (lit.). Water Oak.

Quercus obtusa obovatifolia (Sargent) Sudworth.[77] **Water Oak.**

RANGE.—Southeastern Texas (vicinity of Beaumont, Jefferson County).
NOTE ON NOMENCLATURE.—Formerly designated as *Quercus rhombica* var. *obovatifolia* Sargent.

NAME IN USE

Water Oak

× **Quercus beaumontiana** Sargent. **Hybrid.**

RANGE.—Southeastern Texas (Beaumont).[78]
NOTE ON NOMENCLATURE.—Supposed to be a hybrid between *Quercus obtusa* Ashe and *Quercus rubra* Linnæus.

× **Quercus cocksii** Sargent. **Hybrid.**

RANGE.—Central Louisiana (Pinesville, Rapides Parish).
NOTE ON NOMENCLATURE.—Supposed to be a hybrid between *Quercus rhombica* Sargent and *Quercus velutina* La Marck.

* **Quercus phellos** Linnæus. **Willow Oak.**

RANGE.—From New York (Tottenville, Staten Island) to western Florida—usually in the low maritime plain—and through the Gulf region to Texas (Navasota River), and through Arkansas, eastern Oklahoma and southeastern Missouri to central Tennessee, northwestern Kentucky, and Illinois (Massac and Pope Counties).

NAMES IN USE

Willow Oak (R. I., N. Y., Pa., Md., Del., Ala., N. C., S. C., Fla., Miss., La., Tex., Ark., Mo.).
Peach Oak (N. J., Del., Ohio).
Water Oak (N. C., S. C.).
Swamp Willow Oak (Tex.).
Red Oak (trade, in part).
Pin Oak (La., Miss.).
Laurel Oak.

× **Quercus subfalcata** Trelease. **Hybrid.**

RANGE.—Southern Arkansas (vicinity of Fulton and McNab) and eastern Texas; Mississippi (Lawrence County); Kentucky (Ballard County).
NOTE ON NOMENCLATURE.—Supposed to be a hybrid between *Quercus phellos* Linnæus and *Quercus rubra* Linnæus.

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[76] Lester F. Ward first found this tree in the Dismal Swamp in 1887, and believed it to be a form of the Laurel Oak. The latter species and the Water Oak appear to have been generally confused with this species. From the Water Oak it differs in the rhombic shape of its leaves and in its larger acorns with deeper cups, which are rounded, not flat-bottomed, as in the Water Oak, and in its more persistent foliage. It differs from the Laurel Oak in the rhombic shape of its leaves, which are also very much thinner and turn yellow in autumn.

[77] Its chief distinctive characteristic is the broad top-end of the leaves which are often somewhat three-lobed or rounded.

[78] C. S. Sargent (Bot. Gaz., LXV, 451, 1918) states that the one tree now known was found on a street leading to Magnolia Cemetery in Beaumont, Tex.

× Quercus subfalcata microcarpa Sargent.[79] **Hybrid.**

RANGE.—Known only in cultivation (Arnold Arboretum, Jamaica Plain, Massachusetts).

NOTE ON NOMENCLATURE.—Supposed to be a hybrid between *Quercus phellos* Linnæus and *Quercus rubra* Linnæus.

× Quercus heterophylla Michaux fils. **Bartram Oak (Hybrid).**

RANGE.—Pennsylvania (near Philadelphia—but tree long since destroyed); New Jersey (near Camden); Delaware (Wilmington); New York (Staten Island); Virginia (near Alexandria); District of Columbia; western North Carolina; Tennessee (Coffee County); Alabama (near Falkville); southeastern Oklahoma; Texas (Houston).

NOTE ON NOMENCLATURE.—Supposed to be a hybrid between *Quercus phellos* Linnæus and *Quercus borealis maxima* (Marshall) Ashe, some authors substituting *Quercus velutina* La Marck for the latter supposed parent.[80] *Quercus Hollickii* Schneider is believed to be only a phase of this hybrid.

NAMES IN USE

Bartram's Oak (Del., Ala.).
Burriers Oak (lit.).
Variable Oak (lit.).

***Quercus laurifolia** Michaux. **Laurel Oak.**

RANGE.—North Carolina (Craven County) and southward (in the coast region) to Florida (Biscayne Bay and Caloosahatchee River); westward in the Gulf region to Louisiana; ranging inland more or less throughout this territory.

NAMES IN USE

Laurel Oak (N. C., S. C., Ala., Fla.).
Swamp Laurel Oak.
Darlington Oak (S. C.).
Willow Oak (Fla., S. C.).
Water Oak (N. C., Ga.).
Pin Oak (La., Miss.).

Quercus laurifolia (hybrida)[81] Michaux. **Laurel Oak.**

RANGE.—Range imperfectly known at present. Known to occur in southeastern Virginia (Blackwater River near Zuni, Isle of Wight County); eastern North Carolina (near Newbern); South Carolina (vicinity of Darlington and Bluffton); Florida (Apalachicola River at Chattahoochee).[82]

NAME IN USE

Laurel Oak

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[79] C. S. Sargent (Bot. Gaz., Vol. LXV, No. 5, p. 454, 1918) says that the type of this form was obtained from the Walenberg Nurseries, Hazerswoude, Holland, under the name *Quercus chinensis microcarpa*.

[80] Arthur Hollick (Sci. Am., Oct. 25, 1919, p. 422) states that from planted acorns of Bartram's Oak he derived typical plants of the Red Oak [*Quercus borealis maxima* (Marshall) Ashe], of the Willow Oak, and of *Quercus heterophylla* Michaux f. From this experiment it would seem that the first two of these derivatives are the parents of Bartram Oak.

[81] Before this originally constituted trinominal member that of *Quercus hybrida* (Chapman) Small (=*Quercus aquatica* Chapman) would fall, the latter by some authors being considered a synonym of *Quercus nigra* Linnæus.

[82] Sargent (Bot. Gaz., Vol. LXV, 433, 1918).

Quercus laurifolia tridentata Sargent.[83] **Laurel Oak.**

RANGE.—Florida (Orlando).

NAMES IN USE

Trident Oak (lit.). Laurel Oak.

Quercus cinerea Michaux. **Blue-jack Oak.**

RANGE.—From Virginia (Cape Henry) and North Carolina (in a maritime belt 40 to 50 miles inland) to Florida (Fort Myers and Peace River across the peninsula); west on Gulf coast to Texas (Brazos River and inland as far as Dallas) and southeastern Oklahoma.

NOTE ON NOMENCLATURE.—Formerly designated as *Quercus brevifolia* (La Marck) Sargent.

NAMES IN USE

Upland Willow Oak (N. C., Ala., Tex.).
Blue Jack (N. C., Fla., Tex., Ga., La.).
Sand Jack (Tex.).
High-ground Willow Oak (S. C.).
Turkey Oak (S. C., Ga., Fla.).
Shin Oak (Tex.).
Cinnamon Oak (Fla.).
Blue-jack Oak.

Quercus cinerea (β) dentato-lobata A. de Candolle.[84] **Blue-jack Oak.**

RANGE.—Southern Georgia (vicinity of Lumber City and Climax); eastern Florida (San Mateo and Orlando); Alabama (at Cottondale and Mount Vernon); Texas (San Augustine and Brazos Counties).

NAME IN USE

Blue-jack Oak

× Quercus caduca Trelease. **Hybrid.**

RANGE.—Georgia (Charlton and Telfair Counties); Florida (Duval and Alachua Counties); Mississippi (Harrison County); Texas (Milam and Brazos Counties).

NOTE ON NOMENCLATURE.—Supposed to be a hybrid between *Quercus cinerea* Michaux and *Quercus nigra* Linnæus.

× Quercus subintegra Trelease. **Hybrid.**

RANGE.—Coast region of Georgia to Florida (Columbia County).

NOTE ON NOMENCLATURE.—Supposed to be a hybrid between *Quercus cinerea* Michaux and *Quercus rubra* Linnæus. Formerly designated as *Quercus falcata subintegra* Engelmann.

× Quercus oviedoensis Sargent. **Hybrid.**

RANGE.—Central-eastern Florida (Oviedo, Orange County).

NOTE ON NOMENCLATURE.—Supposed to be a hybrid between *Quercus cinerea* Michaux and *Quercus myrtifolia* Willdenow.

× Quercus atlantica Ashe. **Hybrid.**

RANGE.—Carolina Coast region.

NOTE ON NOMENCLATURE.—Supposed to be a hybrid between *Quercus cinerea* Michaux and *Quercus laurifolia* Michaux. Recently designated as *Quercus sublaurifolia* Trelease.

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[83] Based on a single tree which C. S. Sargent (l. c.) says T. G. Harbison recently found planted among typical Laurel Oaks in a street of Orlando, the leaves of this tree all being three-lobed.

[84] This varietal form of the Blue-jack Oak was described under its present name in 1864, but it was subsequently neglected as unworthy of distinction from the species, from which it is distinguished by its lobed leaves. It has been recently revived by C. S. Sargent (Bot. Gaz., Vol. LXV, 434, 1918).

× Quercus podophylla Trelease. **Hybrid.**

RANGE.—Virginia to South Carolina (coast region).

NOTE ON NOMENCLATURE.—Supposed to be a hybrid between *Quercus cinerea* Michaux and (?) *Quercus velutina* La Marck. It is *Quercus petiolaris* Ashe, which appears to be preoccupied.

× Quercus dubia Ashe. **Hybrid.**

RANGE.—Range imperfectly known at present. As now understood this hybrid occurs in North Carolina (Bladen County); Florida (vicinity of Jacksonville). Trees believed to be of the same origin have been found in South Carolina (Beaufort County); Georgia (Telfair and Decatur Counties); Florida (Duval, Orange, Alachua, Putnam, and Columbia Counties); and in Mississippi (Lincoln County).

NOTE ON NOMENCLATURE.—Supposed to be a hybrid between *Quercus cinerea* Michaux and *Quercus laurifolia* Michaux, some authors also believing it to be a hybrid between *Quercus phellos* Linnaeus and (?) *Quercus velutina* LaMarck.

Quercus imbricaria Michaux. **Shingle Oak.**

RANGE.—From Pennsylvania (Lehigh County) west through Ohio to southern Michigan (Washtenaw County, Kalamazoo County), and Wisconsin to Missouri, northeastern Kansas and southeastern Nebraska; south to the District of Columbia and (in the Allegheny Mountains) to northern Georgia and Alabama, to middle Tennessee and northern Arkansas.

NAMES IN USE.

Shingle Oak (Del., Md., N. C., S. C., Ky., Mo., Ind., Ill., Kans., Iowa, Nebr.).
Laurel Oak (Pa., Del., S. C., Ky., Ill., Nebr., Iowa).
Jack Oak (Ill.).
Water Oak (N. C., Tenn., Ky.).
Turkey Oak (N. C.).
White Oak (N. C.).
Swamp Oak (Mo.).
Pin Oak (Mo.).

× Quercus exacta Trelease. **Hybrid.**

RANGE.—Missouri (8 miles west of St. Louis; but tree since destroyed); southern Illinois (vicinity of Olney); northwestern Indiana (vicinity of Crown Point); Pennsylvania (at Finland, Bucks County.—W. A. Kline).

NOTE ON NOMENCLATURE.—Formerly designated as *Quercus imbricaria* x *palustris* Engelmann, which are believed to be the parents.

× Quercus leana Nuttall. **Lea Oak (Hybrid).**

RANGE.—Ohio (near Cincinnati); District of Columbia and western North Carolina to southern Michigan, throughout Illinois, and southeastern Missouri. Range imperfectly known.

NOTE ON NOMENCLATURE.—Supposed to be a hybrid between *Quercus imbricaria* Michaux and *Quercus velutina* LaMarck.

NAME IN USE

Lea Oak

Quercus hypoleuca Engelmann. **Whiteleaf Oak.**

RANGE.—From western Texas (mountains) over mountains of New Mexico and Arizona, south of the Colorado Plateau; Mexico (northern Chihuahua and Sonora).

NAMES IN USE

Oak (Ariz.).
Mexican Oak.
White-leaved Oak.

***Quercus wislizenii** A. de Candolle.[85] **Highland Live Oak.**

RANGE.—From northern California (lower slopes Mount Shasta and southward through the coast region to Santa Lucia Mountains, Santa Rosa and Santa Cruz Islands, and lower slopes of Sierra Nevada to Tijon Pass, San Bernardino, San Jacinto, and Cuyamaca Mountains) to Lower California (Mount San Pedro Martir).

NAMES IN USE

Live Oak (Calif.).
Highland Live Oak (Calif.).
Interior Live Oak (Calif. lit.).
Sierra Live Oak (hort.).
Black Live Oak.
Wislizenus Oak

×Quercus morehus Kellogg. **Evergreen Black Oak (Hybrid).**

RANGE.—California (Northern Coast Ranges and Sierra Nevada foothills in Marin, Sonoma, Mendocino, Yuba, Placer, Lake, Butte, Eldorado, Sacramento, Amador, Calaveras, Tuolumne, Mariposa, Madera, Tulare, Fresno, and San Bernardino Counties).

NOTE ON NOMENCLATURE.—Supposed to be a hybrid between *Quercus wislizenii* A. de Candolle and *Quercus kelloggii* Newberry.

NAMES IN USE

Abrams Oak (Calif.).
Evergreen Black Oak (Calif.).
Spanish Oak (Calif.).
Moreh Oak (Calif.).
Morehus Oak (lit.).

Quercus myrtifolia Willdenow. **Myrtle Oak.**

RANGE.—From South Carolina (on coast and islands) to eastern Florida (Biscayne Bay); westward, crossing central Florida, and from the Caloosahatchee River, in the coast region of Florida, Alabama, and Mississippi.

NAMES IN USE

Myrtle Oak (lit.).
Sea-side Scrub Oak (South Atlantic).
Scrub Oak (lit.).

***Quercus agrifolia** Née. **Coast Live Oak.**

RANGE.—From northern California (Sonoma County and along the coast ranges and islands) to Lower California (Mount San Pedro Martir).

NAMES IN USE

Coast Live Oak (Calif.).
California Live Oak (Calif., and hort.).
Encina (Calif.).
Evergreen Oak (Calif.).

Quercus pricei Sudworth.[86] **Coast Live Oak.**

RANGE.—California (Monterey County).

NAMES IN USE

Price Oak (lit.).
Live Oak.
Coast Live Oak.

[85] A shrubby form of this species, *Quercus wislizenii frutescens* Englemann, occurs as far south as Lower California.

[86] Forest Trees of the Pacific Slope, 309, Fig. 143, 1908. This oak appears to be closely related to *Quercus agrifolia* Née and to *Quercus wislizenii* A. de Candolle, from both of which it differs in not having the edges of the shallow thin cups infolded, the infolded edges of the cups being characteristic of *Quercus agrifolia* and more or less of *Quercus wislizenii*.

***Quercus chrysolepis** Liebmann.[87] **Canyon Live Oak.**

RANGE.—From southern Oregon (Cow Creek Valley) through California (coast ranges, western slopes Sierra Nevada, San Bernardino, and San Jacinto Mountains) to Lower California (Mount San Pedro Martir); mountain summits of Arizona (Huachuca, Santa Catalina, and Chiricahua Mountains; also in Verde River Canyon—vicinity of Camp Verde; in Sycamore Canyon); Mexico (northern Sonora).[88]

NAMES IN USE

Live Oak (Calif., Oreg.).
Maul Oak (Calif.).
Iron Oak (Calif.).
Valparaiso Oak (Calif.).
Black Live Oak (Calif.).
Canyon Live Oak (Calif.).
Canyon Oak (Calif.).
Golden-cup Oak (Calif.).
Hickory Oak (Kern County, Calif.).
Golden-cupped White Live Oak (Calif., lit.).
White Live Oak (Calif., lit.).

Quercus chrysolepis palmeri Engelmann.[89] **Canyon Live Oak.**

RANGE.—Boundary between California and Lower California; western Arizona (Prescott National Forest); Utah, Nevada and New Mexico—Rydberg.

NAMES IN USE

Palmer Oak.
Pin Oak (Ariz.).
Canyon Live Oak.

Quercus chrysolepis vaccinifolia (Kellogg)[90] Engelmann. **Huckleberry Oak.**

RANGE.—California (high elevations Sierra Nevada).

NAME IN USE

Huckleberry Oak

Quercus tomentella Engelmann. **Island Live Oak.**

RANGE.—Southern California (Santa Rosa, Santa Cruz, Santa Catalina Islands, off coast of California); Guadaloupe Islands, off coast of Lower California.

NAME IN USE

Island Live Oak

***Quercus emoryi** Torrey. **Emory Oak.**

RANGE.—Mountains of western Texas and of southern New Mexico and Arizona south of the Colorado Plateau; Mexico (mountains of Nuevo Leon, Chihuahua, and Sonora).

NAMES IN USE

Emory's Oak (Calif.).
Black Oak (Ariz., N. Mex.).

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[87] W. L. Jepson (Silva of Calif., 224, 1910) characterizes the following forms of this species; forma *grandis* Jepson (occurring in narrow north coast range canyons); forma *pendula* Jepson (found along Upper San Benito River; probably also in El Dorado and Amador Counties); forma *Hansenii* Jepson (Amador County—Pine Grove); forma *nana* Jepson (Mount St. Helena and other coast range summits).

[88] P. A. Rydberg (**Flor.** Rky. Mts. and Adj. Plains, 201, 1917) describes *Quercus Wilcoxii* Rydberg, Wilcox Oak, said to occur in Utah, Nevada, Arizona, and New Mexico and adjacent Mexico. Britton and Shafer's figure of this plant (North Am. Trees, 310, 1908) shows it to be nearly, if not identical, with what is here held to be a southwestern variety of *Quercus chrysolepis* Liebmann. I have not seen the type specimen of *Quercus Wilcoxii* Rydberg which further study may, however, show to be specifically distinct. For the present, however, the writer prefers to consider it *Quercus chrysolepis palmeri* Engelmann.

[89] W. L. Jepson (Silva of Calif., 225, 1910) prefers to follow Engelmann in considering this specifically distinct from the Canyon Live Oak and designates it as *Quercus palmeri* Engelmann.

[90] Originally described as *Quercus vaccinifolia* Kellogg, a disposition which is accepted by W. L. Jepson (op. cit., 224). But some of the varietal characteristics connecting this high mountain plant with the Canyon Live Oak seem clear, and it is desirable to maintain this relationship.

Quercus dumosa Nuttall.[91] **California Scrub Oak.**

RANGE.—California (western slopes of Sierra Nevada; coast ranges south of San Francisco Bay; islands off southern coast and inland to Mohave Desert; San Bernardino and San Jacinto Mountains); Lower California (to near San Telmo).

NAME IN USE

California Scrub Oak (lit.)

Quercus dumosa bullata Engelmann.[92] **California Scrub Oak.**

RANGE.—Northern California (San Francisco Bay to Mendocino County and Napa Valley).

NOTE ON NOMENCLATURE.—Formerly designated as *Quercus dumosa revoluta* Sargent.

NAMES IN USE

Curl-leaf Scrub Oak (lit.). Leather Oak.
California Scrub Oak.

Quercus dumosa alvordiana (Eastwood) Jepson.[93] **California Scrub Oak.**

RANGE.—Southern California (coast ranges of Kern County in San Emigdio Canyon; also in the San Carlos Range.—130 miles northward). Range imperfectly known at present.

NOTE ON NOMENCLATURE.—Originally described (1908) as *Quercus Alvordiana* Eastwood.

NAMES IN USE

Brittle-leaf Oak (lit.). California Scrub Oak.

***Quercus virginiana** Miller.[94] **Live Oak.**

RANGE.—From Virginia (shores of Mobjack Bay), on islands and near the coast, to southern Florida and along the Gulf coast to western Texas (mouth of Rio Grande and inland to the Red River and Apache and Guadalupe Mountains); southern Mexico and Cuba.

NAME IN USE

Live Oak

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[91] Commonly a low shrub throughout its mainland range, becoming a small tree only on the south-coast islands.

Quercus Macdonaldii Greene, a southern California shrub or small tree, considered by some authors a distinct species, but by others treated as a phase of *Quercus dumosa* Nuttall, is perhaps best disposed of as by W. L. Jepson (Silva Calif., 49, 1910), who believes this tree to be a hybrid between *Quercus dumosa* Nuttall and *Quercus engelmannii* Greene.

[92] W. L. Jepson (op. cit., 219) considers this specifically distinct and has proposed for it the name *Quercus durata* Jepson, "Leather Oak."

[93] W. L. Jepson (op. cit. 218) considers the Shrub Oak *Quercus turbinella* Greene (West-Am. Oaks, 37, 1889; 59, t. 27, 1890) a variety of the Shrub Oak, calling it *Quercus dumosa* var. *turbinella* Jepson, a disposition that seems proper. The range of this plant, as now known, is in northern Lower California and near Campo, San Diego.

In this sequence should be recorded the shrubby Sadler's Oak or Deer Oak, *Quercus sadleriana* R. Brown Campst, which occurs in southwestern Oregon (top of coast mountains along old Wimer Road) and in northwestern California (Crescent City Trail, Del Norte County). See Forest Trees Pacific Slope, 285, fig. 126, 1908.

[94] Most students of southern trees have long observed that *Quercus virginiana* Miller has been made to include a thin-leafed and a thick-leafed form. The type specimen on which *Quercus virginiana* Miller was based has not been preserved. C. S. Sargent (Bot. Gaz., LXV, 443, 1918) believes that from circumstantial evidence it is safe to assume that the type of this species is the thin-leafed form, which is the most widely distributed one and includes practically all of the large live oak trees met with. The leaves of this form are only slightly curled on the border, while the thicker-leafed form has leaves that are conspicuously curled on their edges. Otherwise the mature trees of both forms are alike in their habit of growth, bark, and fruit.

Quercus virginiana geminata (Small) Sargent.[95] **Live Oak.**

RANGE.—North Carolina (coast region, below Cape Fear River) to Florida (Jupiter Island and Caloosahatchee River) and Mississippi.

NOTE ON NOMENCLATURE.—Formerly designated as *Quercus geminata* Small (1897).

NAME IN USE

Live Oak

Quercus virginiana virescens Sargent. **Live Oak.**

RANGE.—Florida (Alacahua, Seminole, Levy, and Dade Counties).

NAME IN USE

Live Oak

Quercus virginiana macrophylla Sargent.[96] **Live Oak.**

RANGE.—Southeastern Texas (known now to occur only at Pleasanton, in the Atascosa River bottoms and flat woods above the river, Atascosa County.—Sargent).

NAME IN USE

Live Oak

Quercus virginiana eximea Sargent.[97] **Live Oak.**

RANGE.—Eastern Louisiana (Livingston and Tangipahoa Parishes).

NAME IN USE

Live Oak

× **Quercus coloradensis** Ashe. **Hybrid.**

RANGE.—Eastern Texas (Burnet County, Colorado River above Marble Falls).

NOTE ON NOMENCLATURE.—Believed to be a hybrid between *Quercus virginiana* Miller and *Quercus macrocarpa* Michaux.

Quercus reticulata Humboldt, Bonpland, and Kunth. **Netleaf Oak.**

RANGE.—Southern New Mexico (San Luis and Animas Mountains) and southern Arizona (Mount Graham, Santa Rita, Huachuca, Chiricahua, Rincon, and Santa Catalina Mountains); southward into Mexico.

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[95] A distinctly large-leafed form of this variety has been characterized as *Quercus virginiana geminata*, forma *grandifolia* Sargent, which occurs in Florida (Orange, Duval, St. John, Alachua, Putnam, and Levy Counties).

[96] Differs from the typical form of *Quercus virginiana* Miller in its much larger leaves.

[97] Differs from the typical form of *Quercus virginiana* Miller in its smaller size, pale, nearly smooth bark, less hairy twigs, and in the smaller size of its leaves and acorns (Sargent).

The following shrubby varieties of *Quercus virginiana* Miller have been distinguished and are recorded here in order to present a complete record of all known forms of this interesting species.

Quercus virginiana fusiformis (Small) Sargent, occurring in eastern Texas (Edwards Plateau and in Kerr and Comal Counties), is very similar in all its characteristics to the typical form of *Quercus virginiana* Miller except in its shrubby form and in its smaller leaves. Formerly described as *Quercus fusiformis* Small.

Quercus virginiana dentata Chapman, Dwarf Live Oak, occurring abundantly in Florida (pine barrens near the coast), was first distinguished under its present name in 1860, later being described as *Quercus virginiana minima* Sargent and as *Quercus minima* Small.

Quercus virginiana maritima (Michaux) Sargent, Seaside Live Oak, occurring along the coast of South Carolina and southward on the Florida Coast to Miami, Dade County, was originally described in 1801 as *Quercus virens* (maritima) Michaux, the varietal relationship being clearly indicated in 1860 by the name *Quercus virens* var. *maritima* Chapman. Professor Sargent (op. cit. 449) suggests that *Quercus succulenta* Small (from Dade County, Fla.) appears to be a form of this variety with its fruit borne in elongated spikes. Distinguished by its large many-lobed leaves at the base of the stem, the leaves at the top of the stem being entire.

Quercus virginiana pygmaea Sargent, Pygmy Live Oak, occurring in Florida (Orange, Duval, Seminole, Wakulla, and Lee Counties) and Georgia (near the seacost in Glynn County), is distinguished by its usually three-lobed leaves and small acorns.

NAME IN USE

Netleaf Oak (lit.)

Quercus toumeyi Sargent. **Toumey Oak.**

RANGE.—Southeastern Arizona (Mule Mountain, Cochise County; reported also from the Huachuca and Pedrogosa Mountains).

NAME IN USE

Toumey's Oak (lit.)

***Quercus arizonica** Sargent. **Arizona White Oak.**

RANGE.—Southern New Mexico and Arizona; northern Mexico.

NAMES IN USE

White Oak.
Arizona White Oak.

× Quercus organensis Trelease. **Hybrid.**

RANGE.—New Mexico (Organ Mountains).

NOTE ON NOMENCLATURE.—Supposed to be a hybrid between *Quercus arizonica* Sargent and *Quercus grisea* Liebmann.

***Quercus oblongifolia** Torrey. **Mexican Blue Oak.**

RANGE.—Western Texas (Chisos, Chinati, and Davis Mountains), through southern New Mexico and Arizona, and south into northern Mexico.

NAMES IN USE

White Oak.
Blue Oak.
Mexican Blue Oak.

Quercus engelmannii Greene. **Evergreen White Oak.**

RANGE.—Southwestern California (west of coast range in a belt 50 miles wide from vicinity of Sierra Madre to the mesa east of San Diego); Lower California.

NAMES IN USE

Engelmann's Oak.
Evergreen White Oak.
Mesa Oak (Calif.).
Evergreen Oak (lit.).

***Quercus douglasii** Hooker and Arnott. **California Blue Oak.**

RANGE.—California (from Mendocino County and valley of upper Sacramento River southward on westward slopes of Sierra Nevada and valleys of the coast ranges to the Tehachapi Pass and across to the border of the Mohave Desert; also in Los Angeles County).

NAMES IN USE

Mountain White Oak (Calif.)
Rock Oak (Calif.).
White Oak (Calif.).
Blue Oak (Calif.).
Iron Oak (Calif.).
Post Oak (Calif.).
Mountain Oak (Calif.).
Douglas Oak (lit.).
California White Oak (lit.).
California Rock Oak (lit.).
Hill Oak (Calif.).
Encina (Calif.).
California Blue Oak.

× Quercus jolonensis Sargent. **Hybrid.**

RANGE.—California (Monterey County, from Jolon to King City).
NOTE ON NOMENCLATURE.—Supposed to be a hybrid between *Quercus douglasii* Hooker and Arnott and *Quercus lobata* Nee.

Quercus vaseyana Buckley. **Shin Oak.**

RANGE.—Western Texas (Kerr, Edwards, Valverde, Uvalde, Menard, Kimble, Kendall, and Real Counties).
NOTE ON NOMENCLATURE.—By some authors designated as *Quercus vaseyana* Rydberg.

NAMES IN USE

Shin Oak. Vasey Oak.

Quercus mohriana Rydberg.[98] **Shin Oak.**

RANGE.—Northwestern and central Texas; southwestern Oklahoma (Beckham County).

NAME IN USE

Shin Oak (Tex.)

Quercus laceyi Small. **Lacey Oak.**

RANGE.—Western Texas (Edwards, Kerr, Menard, Real, Kimble, Uvalde, Bandera, and Kendall Counties).

NAME IN USE

Lacey Oak (lit.)

Quercus annulata Buckley.[99] **Shin Oak.**

RANGE.—Central and western Texas (dry hills).
NOTE ON NOMENCLATURE.—Formerly united with Durand's Oak and designated as *Quercus breviloba* (Torrey) Sargent.

NAMES IN USE

Texas Shin Oak. Shin Oak.

Quercus durandii Buckley.[1] **Durand White Oak.**

RANGE.—Rather rare and locally distributed. Georgia (Richmond and Sumter Counties); Mississippi (Lowndes, Noxubee, and Adams Counties); Arkansas (Hempstead County); Louisiana (Natchitoches Parish); eastern Texas (coast region to Victoria County, and inland to San Saba and Dallas Counties); Mexico (Nuevo Leon).
NOTE ON NOMENCLATURE.—Formerly designated as *Quercus breviloba* (Torrey) Sargent, in part.

NAMES IN USE

White Oak (Ala., Tex., Ark.).
Bastard Oak (Ala., La., Tex.).
Basket Oak (Ala., La., Tex.).
Texas White Oak (Ala.).
Shin Oak (Tex.).
Pin Oak (Tex.).
Durand's Oak (Ala., La., Tex.).
Durand White Oak.

[98] (In Rydberg, Bull. N. Y., Bot. Gard., II, 219.) Previously excluded from our arborescent flora because it was known only as a shrub. It is now known to become a small tree, the species being especially abundant in the Staked Plains region.
[99] *Quercus annulata* is chiefly shrubby, forming dense thickets and only occasionally becoming a tree.
[1] This name as originally applied appears to have included two distinct species, Durand's Oak and the Texas Shin Oak (*Quercus annulata* Buckley).

×Quercus macnabiana Sudworth. **Hybrid.**

RANGE.—Arkansas (Hempstead County, in the vicinity of McNab). A single tree, now known, is growing on a bluff.

NOTE ON NOMENCLATURE.—It is the *Quercus Durandii×Stellata* of E. J. Palmer, who found it with these two oaks, which he says seem to be the parents.

Quercus chapmanii Sargent. **Chapman White Oak.**

RANGE.—South Carolina to Florida (Indian River and Caloosahatchee River. Commonly near the coast; most abundant in western Florida).

NAMES IN USE

Chapman Oak. Chapman White Oak.

***Quercus alba** Linnæus.[2] **White Oak.**

RANGE.—From southern Maine to southwestern Quebec and through southern Ontario, Lower Peninsula of Michigan (from Lovell's, Crawford County, and Williamsburg, Grand Traverse County, southward) and southern Minnesota, eastern Iowa, southeastern Nebraska and eastern Kansas, Arkansas, and Oklahoma; south to western Florida and Texas (Brazos River).

NAMES IN USE

White Oak (Me., N. H., Vt., Mass., R. I., Conn., N. Y., N. J., Pa., Del., Va., W. Va., N. C., S. C., Ala., Fla., Ga., Miss., La., Tex., Ky., Mo., Ohio, Ill., Ind., Kans., Nebr., Mich., Wis., Minn., S. Dak. (cult.), Iowa, Ontario).
Stave Oak (Ark.).
West Virginia Soft White Oak (trade).
Forked-leaf White Oak (trade).

Quercus alba latiloba Sargent. **White Oak.**

RANGE.—Same general distribution as the species.

NOTE ON NOMENCLATURE.—Formerly not separated from the typical form of White Oak; it is the common form of White Oak met with in the North (E. J. Palmer has recorded its occurrence in southwestern Arkansas with the species).

NAME IN USE

White Oak.

Quercus alba repanda Michaux.[3] **White Oak.**

RANGE.—Louisiana (at a point between Springfield and Ponchatoula, Tangipahoa Parish). The range of this variety has not yet been determined. In general, it may be looked for within the range of the species.

NAME IN USE

White Oak

×Quercus jackiana Schneider. **Hybrid.**

RANGE.—Massachusetts (Boston—Franklin Park); New York (vicinity of Rochester—Maplewood Park).

NOTE ON NOMENCLATURE.—Supposed to be a hybrid between *Quercus alba* Linnæus and *Quercus bicolor* Willdenow.

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[2] C. S. Sargent (Bot. Gaz., LXV, 434, 1918) has called attention to the three different forms of this species, as indicated in the size and lobing of the leaves, and it seems desirable to adopt the changes Professor Sargent suggests. The typical form of *Quercus alba* Linnæus is characterized by very deeply lobed leaves. *Quercus alba latiloba* Sargent, a second form of the species, has broad, less deeply lobed leaves; while the third form, *Quercus alba repanda* Michaux, is characterized by having leaves with shallow, broad, rounded lobes or with undulate or wavy margins. This may represent only a rare phase of *Quercus alba latiloba* Sargent.

[3] At present time but one tree of this type is known.

×Quercus bebbiana Schneider. **Hybrid.**

RANGE.—Vermont (near Charlotte); Ohio (vicinity of Kenton).

NOTE ON NOMENCLATURE.—Supposed to be a hybrid between *Quercus alba* Linnæus and *Quercus macrocarpa* Michaux, and formerly designated as *Quercus alba*×*macrocarpa* Engelmann.

×Quercus fernowii Trelease. **Hybrid.**

RANGE.—Illinois (Fountaindale); Maryland (Silver Springs); Virginia (Red Clay Creek); Missouri (Allenton, St. Louis County).

NOTE ON NOMENCLATURE.—Supposed to be a hybrid between *Quercus alba* Linnæus and *Quercus stellata* Wangenheim, and formerly designated as *Quercus alba*×*minor* Coulter.

×Quercus saulei Schneider. **Saul Oak (Hybrid).**

RANGE.—Vermont (Addison County); eastern Massachusetts, Rhode Island, New Jersey; eastern Pennsylvania; Illinois (Richland County); District of Columbia; Maryland (Montgomery County); Tennessee (near Fowler); North Carolina (Buncombe and Macon Counties); Alabama (Gadsden, Etowah County).

NOTE ON NOMENCLATURE.—Supposed to be a hybrid between *Quercus alba* Linnæus and *Quercus montana* Willdenow (=*Quercus prinus* of authors, not Linnæus), and formerly designated as *Quercus alba*×*prinus* Engelmann.

NAME IN USE

Saul Oak

×Quercus deamii Trelease. **Hybrid.**

RANGE.—Indiana (vicinity of Bluffton).

NOTE ON NOMENCLATURE.—Supposed to be a hybrid between *Quercus alba* Linnæus, and *Quercus muehlenbergii* Engelmann [=*Quercus acuminata* (Michaux) Houba].

×Quercus faxonii Trelease. **Hybrid.**

RANGE.—Massachusetts (Norfolk and Middlesex Counties); Michigan (vicinity of Greenville, Montcalm County).

NOTE ON NOMENCLATURE.—Supposed to be a hybrid between *Quercus alba* Linnæus and *Quercus prinoides* Willdenow. Recently designated as *Quercus alba*×*rufescens* Bicknell.

×Quercus beadlei Trelease. **Hybrid.**

RANGE.—North Carolina (vicinity of Clarkton, Bladen County); to be looked for within the range of the supposed parents.

NOTE ON NOMENCLATURE.—Supposed to be a hybrid between *Quercus alba* Linnæus, and *Quercus prinus* Linnæus (=*Quercus michauxii* Nuttall).

***Quercus lobata** Née.[4] **Valley White Oak.**

RANGE.—Western California (Sierra Nevada to the ocean, from Trinity River to the southern part of the State—Kern and Los Angeles Counties).

NAMES IN USE

California White Oak (Calif. and hort.).
Weeping Oak (Calif.).
Valley Oak (Calif.).
"Roble" (Mexicans).
White Oak (Calif.).
Valley White Oak.

[4] W. L. Jepson (Silva of Calif., 203, 1910) characterizes the following forms and varieties of this species: Forma *argillora* Jepson, which occurs on clay hills, as on Araquipa Hills, Solano County; forma *inseparata* Jepson, which occurs in the Kaweah River basin; variety *turbinata* Jepson, this variety occurring in Little Lake Valley; variety *Walleri* Jepson, which is found in the Kaweah River basin.

***Quercus garryana** Douglas. **Oregon White Oak.**

RANGE.—From Vancouver Island and southwestern British Columbia (Lower Fraser River) south through western Washington and Oregon and California (coast valleys to Marin County).

NAMES IN USE

White Oak (Calif., Oreg.).
Oregon White Oak (Calif.).
Pacific Post Oak (Oreg.).
Oregon Oak (Oreg.).
Western White Oak (Oreg., Wash.).
Pacific White Oak (lit.).
Western Oak.
Prairie Oak (Wash., Oreg.).
Garry's Oak (lit.).

***Quercus utahensis** (A. de Candolle) Rydberg.[5] **Rocky Mountain White Oak.**

RANGE.—Extreme southwestern Wyoming (near the northwestern Colorado line) to Utah, New Mexico, and Arizona.

NOTE ON NOMENCLATURE.—Formerly designated as "*Quercus gambelii* Nuttall." [6]

NAMES IN USE

Rocky Mountain White Oak (lit.).
White Oak.
Mountain Oak.

Quercus utahensis submollis (Rydberg) Sudworth. **Rocky Mountain White Oak.**

RANGE.—Nevada (low mountainous sections); Arizona (abundant on the Colorado River Plateau; Santa Catalina, Santa Rita, Rincon, Huachuca, and Chiricahua Mountains); and New Mexico (Animas Mountains).

NOTE ON NOMENCLATURE.—Formerly this variety was considered to be only a phase of what was then thought to be Gambel's Oak, and was included under *Quercus gambelii* Nuttall. Designated by some authors as *Quercus submollis* Rydberg, and as *Quercus utahensis* var. *mollis* Sargent. It seems preferable, however, to maintain this tree as a variety of the preceding species.

NAME IN USE

Rocky Mountain White Oak

Quercus leptophylla Rydberg. **Rocky Mountain White Oak.**

RANGE.—At present known only in Colorado (water courses in fertile canyon bottoms; abundant in Huerfano County) and in New Mexico (Mogollon Mountains in Socorro County). The largest of Colorado oaks.

NOTE ON NOMENCLATURE.—Formerly included as a form of *Quercus gambelii* Nuttall.

NAMES IN USE

Colorado White Oak.
Rocky Mountain White Oak.

***Quercus stellata** Wangenheim. **Post Oak.**

RANGE.—From southern Massachusetts (near Brewster, Cape Cod, and islands), Rhode Island, and New York (Long Island) to western Florida, southern Alabama, and Mississippi; west from Long Island to southern Iowa, Missouri, eastern Kansas, southwestern Arkansas, western and southeastern Oklahoma (Rich Mountain), and central Texas (here south to San Antonio River).

NOTE ON NOMENCLATURE.—Formerly designated as *Quercus minor* (Marshall) Sargent.

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[5] *Quercus utahensis* (A. de Candolle) Rydberg is based on *Quercus stellata* δ *utahensis* A. de Candole, published in 1864, which is the oldest tenable name applied to this oak. Use of the above binomial would seem to be a violation of the International Code, but within the spirit of the American Code.

[6] As now understood, *Quercus gambelii* Nuttall is not known to be arborescent.

NAME IN USE

Post Oak (Conn., R. I., N. J., Pa., Del., Md., W. Va., N. C., S. C., Ala., Ga., Fla., Miss., La., Tex., Ark., Tenn., Ky., Mo., Ill., Ind., Iowa, Kans., Ontario).
Box White Oak (R. I., D. C.).
Iron Oak (Del., Miss., W. Va., Tenn.).
White Oak (Ky., Ind., N. C., trade).
Box Oak (Md.).
Brash Oak (Md.).
Barren White Oak (Pa.).
Ridge Oak (Ky.).
Rough Oak.
Turkey Oak.
Rough White Oak.

***Quercus stellata margaretta** (Ashe) Sargent.[7] **Post Oak.**

RANGE.—Throughout the South Atlantic and Gulf States, from Virginia to Arkansas, southeastern Oklahoma, and eastern Texas, where it is the common form of Post Oak.

NOTE ON NOMENCLATURE.—Originally (1894) described as *Quercus minor* var. *Margaretta* Ashe, and later (1903) as *Quercus Margaretta* Small.

NAME IN USE

Post Oak

× Quercus harbinsonii Sargent. **Hybrid.**

RANGE.—Florida (vicinity of Jacksonville, where but one tree is known).

NOTE ON NOMENCLATURE.—Supposed to be a hybrid between *Quercus stellata margaretta* (Ashe) Sargent and *Quercus virginiana geminata* (Small) Sargent.

Quercus stellata boyntonii (Beadle) Sargent.[8] **Post Oak.**

RANGE.—Known now only from northeastern Alabama (summit of Lookout Mountain above Gadsden and Attala, Etowah County).

NOTE ON NOMENCLATURE.—Originally (1901) described as *Quercus boyntonii* Beadle.

NAME IN USE

Post Oak

Quercus stellata attenuata Sargent.[9] **Post Oak.**

RANGE.—Known now only from eastern Arkansas (vicinity of Arkansas Post, southern extremity of Arkansas County).

NAME IN USE

Post Oak

Quercus stellata parviloba Sargent.[10] **Post Oak.**

RANGE.—Known now only from central Texas (Brown County, vicinity of Brownwood).

NAME IN USE

Post Oak

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[7] *Quercus stellata* Wangenheim has leaves with squarish lobes, while the leaves of this variety have rounded or somewhat pointed lobes, occasional leaves having squarish lobes.
Quercus stellata margaretta, forma *stolonifera* Sargent, a shrub, has smaller leaves and reproduces itself in dense thickets by stoloniferous roots. According to C. S. Sargent (Bot. Gaz., LXV, 441, 1918), it occurs in Alabama (vicinity of Selma, Dallas County) and is probably the one found on sandy hills west of Oklahoma City, Okla.

[8] Distinguished from other dwarf post oaks by the yellow-brown pubescence of the leaves and twigs.

[9] Distinguished mainly by its narrow oblong leaves, which are three-lobed at the top, the lobes usually being rounded (Sargent).

[10] It differs from *Quercus stellata* in the smaller leaves which are three- or five-lobed at the top, the lobes being rounded, acute, or the leaves are nearly entire (Sargent).

Quercus stellata anomala Sargent.[11] **Post Oak.**

RANGE.—Known from the same locality as *Quercus stellata parviloba* Sargent.

NAME IN USE

Post Oak

Quercus stellata rufescens Sargent.[12] **Post Oak.**

RANGE.—Western Oklahoma (Beckham County); western Texas (Howard County).—Scarcely arborescent.

NAME IN USE

Post Oak

Quercus stellata araniosa Sargent.[13] **Post Oak.**

RANGE.—Louisiana (Natchitoches Parish); Texas (Liberty and Cherokee Counties); Oklahoma (Pushmataha, Le Fore, and McCurtain Counties); Arkansas (Miller, Pope, and Saline Counties); Alabama (Dallas County).

NAME IN USE

Post Oak

Quercus stellata similis (Ashe) Sudworth. **Post Oak.**

RANGE.—Known now only in south-central Louisiana (Kenison Bayou, near Washington, St. Landry Parish).[14]

NOTE ON NOMENCLATURE.—Formerly designated as *Quercus stellata paludosa* Sargent, not *Quercus paludosa* Petgold.

NAME IN USE

Post Oak

Quercus austrina Small. **Bastard White Oak.**

RANGE.—South Carolina (coast region) to central and western Florida, central and western Alabama, and southern Mississippi.

NAMES IN USE

Pin Oak.
Bastard Oak.
Southern Oak (lit.).
Bastard White Oak.

Quercus macrocarpa Michaux. **Bur Oak.**

RANGE.—From New Brunswick and Nova Scotia westward through St. Lawrence River Valley to Ontario and on the north shores of Lake Huron to southern Manitoba; southward to Maine (Penobscot River region), Vermont (Lake Champlain), Massachusetts (Ware River), Pennsylvania (Lancaster County), and Delaware; west to Minnesota (Superior National Forest at south

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[11] The thick, broad leaves, slightly three-lobed and rounded at the top, suggest hybridity between *Quercus annulata* Buckley and *Quercus stellata* Wangenheim, with which the discoverer (E. J. Palmer) states it was associated (Sargent).

Quercus stellata Palmeri Sargent, Palmer's Post Oak, is a shrubby variety known now only from the western border of Oklahoma near Elk City, Beckham County, where it forms large clumps by underground stems (Sargent).

[12] Characterized chiefly by the thick rust-brown pubescence on the under side of the leaves (variable in shape) and on the twigs during the first 2 seasons (Sargent).

[13] This variety differs from the species in the usually smooth upper surface of the leaves, in the tufted-woolly covering on the under surface of the leaves, and in the usually smooth, reddish or yellow twigs, as well as in the scaly trunk bark. Leaves with square and rounded lobes sometimes occur on the same branch, or each of these two sorts of leaves may be found on different individuals (Sargent).

[14] (Sargent).—The moist or wet-soil habitat of this variety is in strong contrast with that of other forms of the Post Oak, which, as a rule, grow in poor, dry soils.

end of Birch Lake—E. E. Carter), the Dakotas (Black Hills and Turtle Mountains), northeastern Wyoming, western Nebraska, central Kansas, and southwestward into central Tennessee, Oklahoma, and Texas (to Nueces River).

NAMES IN USE

Bur Oak (Vt., N. Y., Pa., Del., W. Va., Ala., Miss., La., Tex., Ark., Mo., Ohio, Ill., Ky., Iowa, Kans., Nebr., Wis., Mich., Minn., N. Dak., S. Dak.).
Mossycup Oak (Mass., Pa., Del., Miss., La., Tex., Ark., Ill., Iowa., Nebr., Kans., Ontario, and hort.).
Overcup Oak (R. I., Del., Pa., Miss., La., Ky., Ill., Minn.).
Blue Oak (Ont.).
Scrub Oak (Nebr., Minn., Iowa).
Overcup White Oak (Vt.).
Mossycup White Oak (Minn.).
White Oak (trade).

× Quercus guadelupensis Sargent. — Hybrid.

RANGE.—Southeastern Texas (valley of the upper Guadalupe River at Fredericksburg Junction, Kendall County.

NOTE ON NOMENCLATURE.—Supposed to be a hybrid between *Quercus macrocarpa* Michaux and *Quercus stellata* Wangenheim.

× Quercus andrewsii Sargent. — Hybrid.

RANGE.—Western Oklahoma (Seiling, Dewey County).

NOTE ON NOMENCLATURE.—Supposed to be a hybrid between *Quercus macrocarpa* Michaux and *Quercus undulata* Torrey.

× Quercus hillii Trelease. — Hybrid.

RANGE.—Indiana (vicinity of Roby); Missouri (Jackson County—vicinity of Independence).

NOTE ON NOMENCLATURE.—Supposed to be a hybrid between *Quercus macrocarpa* Michaux and *Quercus muehlenbergii* Engelmann.

*Quercus lyrata Walter. — Overcup Oak.

RANGE.—From New Jersey (Salem County) and Maryland (Patuxent River, 3 miles below Laurel), and southward to western Florida and west through the Gulf region to Texas (Navasota River), through Arkansas, southeastern Missouri (near Allenton), central Tennessee, Kentucky, southern Indiana, and Illinois. Three trees reported in vicinity of Amana, Iowa, by Prof. B. Shimek.

NAMES IN USE

Overcup Oak (N. C., S. C., Ga., Fla., Ala., Miss., La., Tex., Ark., Ill.).
Swamp Post Oak (Ala., N. C., S. C., Miss., La., Mo.).
Water White Oak (S. C., Miss.).
Oak (Ala.).
Swamp White Oak (Tex.).
White Oak (N. C., trade).

× Quercus comptonæ Sargent.[15] — Hybrid.

RANGE.—As now known, it is represented almost entirely by planted trees, presumably from wild sources, in Alabama (Dallas County); Mississippi (Duncan Park, Natchez, Adams County); Louisiana (Audubon Park and in the streets of New Orleans); Texas (Peyton's Creek, Matagorda County).

NOTE ON NOMENCLATURE.—Supposed to be a hybrid between *Quercus lyrata* Walter and *Quercus virginiana* Miller.

*Quercus bicolor Willdenow. — Swamp White Oak.

RANGE.—From southern Maine to northern Vermont and southwestern Quebec; west through Ontario and southern peninsula of Michigan, southern Wisconsin (Germantown, Juneau County), to southeastern Minnesota; eastern

[15] According to C. S. Sargent (Bot. Gaz., LXV, 457, 1918) Charles Mohr first discovered this hybrid on Peyton's Creek, Matagorda County, Tex., in 1880. The trees then found seem to have disappeared, for subsequently no trace of them has been discovered.

So far as is now known, this tree was previously described, in part, under *Quercus lyrata* Sargent (not Walter) in Silva North Am., VIII, 48, pl. 374, figs. 5 and 8, 1895.

and southern Iowa, southeastern Nebraska, and western Missouri; south to the District of Columbia, along the Appalachian Mountains to West Virginia, northern Kentucky, and Oklahoma.

NOTE ON NOMENCLATURE.—Formerly designated as *Quercus platanoides* (La Marck) Sudworth.

NAMES IN USE

Swamp White Oak (Vt., Mass., R. I., Conn., N. Y., N. J., Pa., Del., W. Va., Mo., Ill., Ind., Iowa, Mich., Ont.).
Swamp Oak (R. I., Pa., Mich.).
Cherry Oak (Del.).
White Oak (N. C., trade).

×Quercus schuettii Trelease. Hybrid.

RANGE.—Wisconsin (Fort Howard); New York (vicinity of Rochester and Golah); Quebec; southern Michigan (vicinity of Ann Arbor, Washtenaw County).

NOTE ON NOMENCLATURE.—Supposed to be a hybrid between *Quercus bicolor* Willdenow and *Quercus macrocarpa* Michaux.

*Quercus prinus Linnæus.[16] Swamp Chestnut Oak.

RANGE.—From New Jersey (Morris and Salem Counties) and Delaware (vicinity of Wilmington) to Florida (Citrus and Putnam Counties); west in the Gulf region to Texas (Trinity River), and Arkansas and southeastern Missouri to central Tennessee and Kentucky, Illinois (lower Wabash River), and southern Indiana.

NOTE ON NOMENCLATURE.—Formerly designated as *Quercus michauxii* Nuttall.

NAMES IN USE

Basket Oak (Ala., Miss., La., Tex., Ark.).
Cow Oak (Ala., Miss., Tex., Ark., Mo.).
Swamp White Oak (Del. ,Ala.).
Swamp Chestnut Oak (N.C., Fla.).
White Oak (N. C., trade).
Chestnut Oak (lit.).

×Quercus byarsii Sudworth. Hybrid.

RANGE.—Southwestern Tennessee (vicinity of Covington, Tipton County).

NOTE ON NOMENCLATURE.—Originally described as *Quercus michauxii* × *macrocarpa* Sudworth.[17] Supposed to be a hybrid between *Quercus prinus* Linnæus and *Quercus macrocarpa* Michaux.

*Quercus montana Willdenow.[18] Chestnut Oak.

RANGE.—From southern Maine (Saco River and Mount Agamenticus), southern New Hampshire and eastern Massachusetts (Blue Hills) to Maryland and District of Columbia), and in the mountains to northern Georgia and Alabama; westward to Lake Champlain, and the Genesee River in western New York (Perry and Hale Counties—R. M. Harper); (reported in Berrien County, Michigan) southern Ohio, Illinois (west-central Union County), and Indiana to central Kentucky and Tennessee and northeastern Mississippi.

NOTE ON NOMENCLATURE.—Formerly designated as *Quercus prinus* of authors, not of Linnæus.

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[16] C. S. Sargent (Rhodora, vol. 17, p. 40, 1915) has shown that the tree to which Linnæus applied the name *Quercus prinus* is the one long known to us as *Quercus michauxii* Nuttall. This discovery makes it necessary now to call the Swamp Chestnut Oak *Quercus prinus* Linnæus.

[17] Nomenclature Arb. Flor. U. S., 158 (Bull. 14, Div. For., U. S. Dept. Agr.), 1897.

[18] As shown by C. S. Sargent (Rhodora vol. 17, p. 40, 1915) the Chestnut Oak must now be designated as *Quercus montana* Willdenow, the name *Quercus prinus* Linnæus having been wrongly applied by authors to this species. See footnote No. 16.

NAMES IN USE

Chestnut Oak (Mass., R. I., Conn., N. Y., N. J., Pa., Del., Md., Va., W. Va., Tenn., N. C., Ala., Ga., Ky.).
Rock Chestnut Oak (Mass., R. I., Pa., Del., Ala.).
Rock Oak (Conn., N. Y., Del., Pa., Ky., N. C.).
Tanbark Oak (Tenn., Ala.).
Mountain Oak (Ala., N. C., Tenn., Ky., Ga.).
White Oak (trade).
White Chestnut Oak.

×Quercus sargentii Rehder. **Hybrid.**

RANGE.—Massachusetts (Holmlea, Brookline).

NOTE ON NOMENCLATURE.—Supposed to be a hybrid between *Quercus montana* Willdenow and *Quercus robur* Linnæus (the so-called English Oak).

*Quercus muehlenbergii Engelmann.[19] **Chinquapin Oak.**

RANGE.—From Vermont (Gardiner's Island in Lake Champlain), western Massachusetts and Connecticut, and New York (on Hudson River north of Newburg) westward through New York, southern Ontario and southern Michigan, Wisconsin, northern Iowa, southeastern Nebraska, eastern Kansas, southeastern Oklahoma, southwestern Arkansas; southward in the Atlantic region to the District of Columbia (and upper Potomac River) and western Florida; in central Tennessee and Kentucky; westward in the Gulf States to central and western Texas (Edwards Plateau, Guadaloupe Mountains); also in southeastern New Mexico (headwaters of Last Chance and Cottonwood Creeks, along Robinson and Turkey Draws, and Dark Canyon, all of which lie in the southern part of the Lincoln National Forest, in Otero and Eddy Counties; also at Pine Lodge, Arroyo Seco).[20]

NOTE ON NOMENCLATURE.—Formerly designated as *Quercus acuminata*, (Michaux) Houba.

NAME IN USE

Chestnut Oak (Conn., Del., Ala., N. C., Miss., La., Tex., Ohio, Ill., Mich., Kans., Nebr.).
Chinquapin Oak (Mass., R. I., Pa., Del., N. C., S. C., Ala., Ark., Miss., Tex., Mo., Ind., Nebr., Kans.).
Pin Oak (Kans., Ark.).
Yellow Oak (Ill., Kans., Nebr., Mich.).
Scrub Oak (N. Y.).
Dwarf Chestnut Oak (Mass., N. C., Tenn.).
Shrub Oak (Nebr.).
White Oak (Tenn., trade).
Rock Oak (Ark.).
Yellow Chestnut Oak.

Quercus muehlenbergii brayi (Small) Sargent.

RANGE.—Texas (Edwards Plateau in Kerr, Uvalde, Kimble, Real, and Bandera Counties).

NOTE ON NOMENCLATURE.—In 1901 it was characterized as *Quercus Brayi* Small. Distinguished by its large acorns, the nuts being 1¼ inches long, and the deep cups sometimes 1 inch in diameter

NAMES IN USE

White Oak (Tex.)

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[19] Britton and Shafer (North Am. Trees, 328, 1908) have segregated from *Quercus muehlenbergii* Engelmann a broadleafed flaky barked form under the name *Quercus Alexanderi* Britton, Alexander's Oak, which is said to have been confused with *Quercus muehlenbergii* Engelmann. The writer hesitates at this time to accept this segregate because Engelmann's characterization of the Yellow or Chinquapin Oak includes both the lanceolate form of leaf and the larger, "broadly ovate or obovate" form of leaf, a phase of the Chinquapin Oak which, according to Engelmann, "is identical in bark and fruit with the narrow-leafed form." *Quercus Alexanderi* Britton is said to be distinguished chiefly by its obovate or oblong-ovate leaves and its flaky, scaly gray bark.

[20] In October, 1915, the writer found this tree growing abundantly in New Mexico along the dry rock borders of the water courses named above, this being then the most western station recorded. In September, 1921, Harrison Burrall of the Forest Service found this oak in the Lincoln National Forest, still farther west, in Lincoln County, vicinity of Pine Lodge in Arroyo Seco. Further exploration doubtless will discover that the tree is quite generally represented in these and other mountains of the region.

Quercus prinoides Willdenow.[21] **Dwarf Chinquapin Oak.**

RANGE.—Massachusetts (Essex County) to North Carolina and westward to southeastern Nebraska, central Kansas, Oklahoma, and eastern Texas.

NAMES IN USE

Dwarf Chinquapin Oak.
Scrub Oak.
Dwarf Chestnut Oak.
Chinquapin Oak.
Running White Oak.

Quercus undulata Torrey. **Rocky Mountain Shin Oak.**

RANGE.—Colorado (mountains) and through New Mexico and Arizona to southern Utah and Nevada.

NAMES IN USE

Scrub Oak (Colo.)
Shin Oak.
Rocky Mountain Oak (lit).
Rocky Mountain Shin Oak.

Family ULMACEÆ

ULMUS Linnæus

***Ulmus americana** Linnæus. **American Elm.**

RANGE.—From southern Newfoundland to Lake Superior (north shores) and to the eastern base of the Rocky Mountains (here up the Saskatchewan River to latitude 54° 30″); south to Florida (De Soto County); west to North Dakota (Turtle Mountains), South Dakota (Black Hills), western Nebraska, central Kansas, Oklahoma, southwestern Arkansas (Rich Mountain), and Texas (Coke County).

NAMES IN USE

American Elm (Vt., Mass., R. I., N. Y., Del., Pa., N. C., Miss., Tex., Ill., Ohio., Kans., Nebr., Mich., Minn., Ont.).
White Elm (Me., N. H., Vt., Mass., R. I., N. Y., Pa., N. J., Del., Md., Va., W. Va., N. C., S. C., Ala., Fla., Miss., La., Tex., Ark., Ky., Mo., Ill., Ind., Kans., Nebr., Ohio, Ont., Iowa, Mich., Minn., N. Dak., S. Dak., Mont.).
Water Elm (Miss., Tex., Ark., Mo., Ill., Iowa, Mich., Ky., Ohio, Minn., Nebr.).
Elm (Mass., R. I., Conn., N. J., Pa., N. C., S. C., Iowa, Wis., Mont.).
Orme Maigre (La.).
Swamp Elm.
Rock Elm.
Springwood (N. C.).
Gray Elm (trade, lit.).
Soft Elm (trade).
Hard Gray Elm (trade).

VARIETIES DISTINGUISHED IN CULTIVATION

Ulmus americana pendula Aiton. **Weeping American Elm**
Ulmus americana columnaris Rehder. **Columnar American Elm**

***Ulmus racemosa** Thomas. **Rock Elm.**

RANGE.—From Quebec (eastern townships) through Ontario, and south through northwestern New Hampshire to southern Vermont; and to northern New Jersey; westward through northern New York; southern Michigan, central Wisconsin (Lake Mendota, near Madison), and southwestern Minnesota to northeastern Nebraska (Meadville), western Missouri, eastern Kansas, and middle Tennessee.

NOTE ON NOMENCLATURE.—Formerly designated as *Ulmus thomasii* Sargent.

[21] For the most part this species is a low shrub forming dense patches. Very occasionally, however, it becomes tree-like.
A truly shrubby form of plant is *Quercus prinoides* var. *rufescens* Rehder, which occurs from Nantucket to New Jersey and is distinguished by the yellowish hairs on its leaves and young twigs.

NAMES IN USE

Cork Elm (Vt., Mass., R. I., N. Y., N. J., Ark., Ohio, Iowa).
Rock Elm (R. I., W. Va., Ky., Mo., Ill., Wis., Iowa, Mich., Nebr., Ont.).
Hickory Elm (Mo., Ill., Ind., Iowa).
White Elm (Ont.).
Thomas Elm (Tenn., Ohio).
Northern Corkbarked Elm (Tenn.).
Corkbark Elm (N. Y.).
Northern Cork Elm (Vt.).
Wahoo (Ohio).
Cliff Elm (Wis., Ky.).
Corky White Elm.
Corky-barked Elm (Ohio).
Corky Elm (W. Va.).

Ulmus alata Michaux. Winged Elm.

RANGE.—From southern Virginia to central Florida (Lake County), and from southern Illinois and Indiana through western Kentucky and Tennessee to the Gulf, and west through southern Missouri, Arkansas, eastern Oklahoma, and Texas (Guadaloupe River).

NAMES IN USE

Winged Elm (N. C., S. C., Ark., Tex., Ill., Ind).
Wahoo (W. Va., N. C., S. C., La., Tex., Ky., Mo.).
Wahoo Elm (Mo.).
Witch Elm (W. Va.).
Elm (W. Va.).
Cork Elm (Fla., S. C., Tex.).
Water Elm (Ala.).
Small-leaved Elm (N. C.).
Red Elm (Fla., Ark.).
Whahoo (S. C.).
Corky Elm (N. C., Tex.).
Mountain Elm (Ark.).
Wing Elm (Ky.).
Southern Elm (N. C.).

*Ulmus fulva Michaux. Slippery Elm.

RANGE.—From Lower St. Lawrence River (Orleans Island) through Ontario to South Dakota and eastern Nebraska, southeastern Kansas, southwestern Arkansas, and Oklahoma; south to western Florida, central Alabama, and Mississippi, western Louisiana and Texas (Kerr and Comal Counties).

NOTE ON NOMENCLATURE.—Formerly designated as *Ulmus pubescens* Walter.

NAMES IN USE

Slippery Elm (Vt., N. H., Mass., R. I., N. Y., N. J., Pa., Del., Md., Va., W. Va., N. C., S. C., Fla., Ala., Ga., Miss., La., Tex., Ky., Mo., Kans., Nebr., Ohio, Ill., Ind., Wis., Mich., Iowa, Minn., Ont.).
Red Elm (Vt., Mass., N. Y., Del., Pa., W. Va., S. C., Ala., Miss., La., Tex., Ark., Ky., Mo., Ill., Kans., Nebr., Iowa, Ohio, Ont., Wis., Mich., Minn.).
Red-wooded Elm (Tenn.).
Rock Elm (Tenn.).
Orme gras (La.).
Moose Elm.
Oo-hoosk-ah="It slips" (Indians, N. Y.).
Indian Elm.
Sweet Elm.
Gray Elm (trade).

Ulmus crassifolia Nuttall. Cedar Elm.

RANGE.—From Mississippi (Sunflower River) through southern Arkansas and Texas (from coast to the Pecos River) to Mexico (Nuevo Leon).

NAMES IN USE

Cedar Elm (Tex.).
Red Elm (Tex.).
Basket Elm (Ark.).
Texas Elm (lit.).
Water Elm (Tex.).
Small-leaved Elm (Tex.).

Ulmus serotina Sargent.[22] **Red Elm.**

RANGE.—Range imperfectly known at present; known now, at different stations, only from southern Kentucky and Tennessee to northeastern Georgia, northern Alabama, northwestern and southwestern Arkansas and eastern Oklahoma; southern Illinois (Richland County.)[23]

NAMES IN USE

Red Elm. September Elm (lit.).

PLANERA Gmelin

Planera aquatica (Walter) Gmelin. **Planer Tree.**

RANGE.—From North Carolina (Cape Fear River) to northern Florida, and westward in the coast region through the Gulf States to Texas (Brazos and Matagorda Counties); northward through western Louisiana, eastern Oklahoma, and Arkansas to southern Missouri, northeastern Mississippi, west Tennessee (Brownsville), northern Kentucky, and Illinois (lower Wabash River).

NAMES IN USE

American Planetree (Ala.).
Planer Tree (N. C., S. C., Fla., La., Tex., Ark., Tenn.).
Water Elm (Fla., La., Miss.).
Sycamore (N. C.).
Plene (La.).

CELTIS Linnæus

***Celtis occidentalis** Linnæus. **Hackberry.**

RANGE.—From New England to Virginia and westward to eastern North Dakota, Iowa, southwestern Missouri, and western Kansas. As formerly understood, the range of this species extended as far north as the St. Lawrence River, as far west as western Washington, Oregon, Nevada, and New Mexico, and southward into Florida, and to Missouri and eastern Texas.

NAMES IN USE

Hackberry (N. H., Vt., R. I., N. Y., N. J., Del., Pa., N. C., W. Va., Mo., Ill., Ind., Wis., Iowa, Kans., Mich., Minn., S. Dak., Ohio, trade).
Sugarberry (N. Y., Pa., Del., Minn.).
Nettle-tree (R. I., Mass., Del., Mich.).
Hoop Ash (Vt.).
One-berry (R. I.).
Hacktree (Minn.).
Bastard Elm (N. J.).
False Elm.
Nigger-pill.
Beaverwood.

Celtis occidentalis canina (Rafinesque) Sargent. **Hackberry.**

RANGE.—From Quebec to North Dakota, Iowa, eastern Nebraska, southwestern Missouri, western Oklahoma; southward in the East to eastern Massachusetts, western New York, southern Ohio, southern Indiana, and Illinois; in northwestern Georgia (Cobb County).

NOTE ON NOMENCLATURE.—Formerly included under *Celtis occidentalis* Linnæus. Originally described as *Celtis canina* Rafinesque, which is maintained by some authors.

NAMES IN USE

Bigleaf Hackberry (lit.) Hackberry.

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[22] The flowers of all of our native elms, except *Ulmus crassifolia* Nuttall and *Ulmus serotina* Sargent, appear in early spring, while the flowers of the latter species appear in the autumn.

[23] Britton and Shafer (North Am. Trees, 346, 1908) state that this elm occurs "in parts of Tennessee," and Robert Ridgway has found an autumnal flowering elm in southern Illinois (vicinity of Olney) which is *Ulmus serotina* Sargent.

Celtis occidentalis crassifolia (LaMarck) Gray. **Hackberry.**

RANGE.—Not yet accurately determined. In general, it may be looked for from Virginia to North Carolina and westward to central Nebraska, Missouri, Oklahoma, Texas, and Alabama; it is reported to occur in Minnesota, North and South Dakota, Wyoming, Colorado, and northern Idaho.

NOTE ON NOMENCLATURE.—Previously included as a form of *Celtis occidentalis* Linnæus, and first described in 1797 as *Celtis crassifolia* La Marck, which some authors still maintain.

NAME IN USE

Hackberry

***Celtis lævigata** Willdenow. **Sugarberry.**

RANGE.—From the coast of Virginia to southern Florida and westward through the Gulf States to the valley of the Rio Grande (in Nuevo Leon, Mexico) and to eastern Texas, Arkansas, eastern Oklahoma, Missouri, eastern Kansas (Kiowa County), southern Illinois, Indiana, Kentucky and Tennessee; occurring also in Bermuda.

NOTE ON NOMENCLATURE.—Formerly designated as *Celtis mississippiensis* Bosc.

NAMES IN USE

Sugarberry (Fla., Ala., Miss.).
Connu (La.).
Bois inconnu (La.).
Hackberry (Tenn., trade, in part).

Celtis lævigata smallii (Beadle) Sargent. **Sugarberry.**

RANGE.—From North Carolina and Tennessee to Georgia, Florida, Alabama and Texas.

NOTE ON NOMENCLATURE.—First described in 1903 as *Celtis Smallii* Beadle.

NAME IN USE

Sugarberry

Celtis lævigata texana (Scheele) Sargent. **Sugarberry.**

RANGE.—Texas (reported to occur in some 26 counties, which are widely scattered from the central-eastern and south-central sections of the state to the northwestern part); southern New Mexico (Chaves and Sierra Counties); southwestern Missouri (Greene, McDonald, and Jasper Counties), western and southeastern Oklahoma; southwestern Arkansas. It occurs also in Mexico.

NOTE ON NOMENCLATURE.—First published in 1847 as *Celtis texana* Scheele. A shrubby form (*microphylla* Sargent) of this variety found in Nolan County, Texas, is distinguished by its small leaves.

NAME IN USE

Sugarberry

Celtis lævigata brachyphylla Sargent. **Sugarberry.**

RANGE.—Western Texas (Nueces River, Uvalde County).

NAME IN USE

Sugarberry

Celtis lævigata brevipes (S. Watson) Sargent. **Sugarberry.**

RANGE.—Central and southern Arizona (Cochise, Pima, Pinal, and Gila Counties).

NOTE ON NOMENCLATURE.—First described in 1879 as *Celtis brevipes* S. Watson, and until recently taken up it was considered a form only of *Celtis reticulata* Torrey.

Celtis lævigata apposita Ashe.

RANGE.—Kentucky (known now only from rocky slopes at Camp Knox).

NAME IN USE

Sugarberry

Celtis lindheimerii Koch.[24] **Palo Blanco.**

RANGE.—Southern Texas (near New Braunfels and San Antonio; also in Wilson, Goliad, Travis, Hays, and Kimble Counties).

NOTE ON NOMENCLATURE.—Formerly treated as a form only of *Celtis lævigata* K. Koch. In 1897 it was described as *Celtis Helleri* Small, this designation being generally maintained until Professor Sargent (l. c.) called attention to Koch's much older name for this tree.

NAME IN USE

Palo Blanco (Tex.)

Celtis reticulata Torrey. **Palo Blanco.**

RANGE.—From western Texas (Uvalde County) to Oklahoma and through southern New Mexico and Arizona.

NOTE ON NOMENCLATURE.—Formerly designated as *Celtis occidentalis reticulata* (Torrey) Sargent, as *Celtis mississippiensis reticulata* (Torrey) Sargent, and as *Celtis reticulata* Torrey.

NAMES IN USE

Hackberry (Tex.). Thick-leaved Hackberry (lit.).
Palo Blanco (Tex.).

Celtis reticulata vestita Sargent.[25] **Palo Blanco.**

RANGE.—West-central Oklahoma (Blaine County, along the North Fork of the Canadian River near Canton.—Sargent).

NAME IN USE

Palo Blanco

Celtis douglasii Planchon. **Hackberry.**

RANGE.—Not yet definitely determined. In general, it may be looked for in British Columbia, Washington to eastern Oregon, Idaho, Utah, and Colorado (eastern foothills), and Arizona (south slope of the Grand Canyon); also said to occur in southern California (Kern and San Diego Counties).

NOTE ON NOMENCLATURE.—Closely related to *Celtis reticulata* Torrey. Possibly includes *Celtis rugulosa* Rydberg as regards its range in Colorado.

NAME IN USE

Hackberry

Celtis pumila georgiana (Small) Sargent. **Hackberry.**

RANGE.—From North Carolina to western Florida; also in central Alabama, southern Missouri, southeastern Oklahoma, southwestern Arkansas, and southern Illinois.

NOTE ON NOMENCLATURE.—First described in 1897 as *Celtis georgiana* Small. *Celtis pumila* Pursh, common in eastern United States, is a low shrub.

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[24] C. S. Sargent (Bot. Gaz., LXVII, 220, 1919) states that the first specimen of this tree was collected (probably near Austin) in 1834, specimens of it being taken subsequently in 1850 and in 1881, all of which are preserved. It was originally described in 1872 as *Celtis Lindheimerii* Koch, from a tree in the Botanic Garden in Berlin, Germany, this tree having been raised from seed collected by Lindheimer and sent to Berlin by Dr. George Engelmann under the name *Celtis Lindheimerii*, which Koch appears to have accepted when he described the plant.

[25] This variety differs from the species in its more pubescent serrate leaves and more pubescent leaf-stems.

NAME IN USE

Hackberry

TREMA Loureiro

Trema mollis Loureiro.

RANGE.—Southern Florida (borders of Biscayne Bay, in the Everglades, and on the southern Keys); West Indies and Mexico.

NOTE ON NOMENCLATURE.—Formerly designated as *Trema micrantha* Chapman (not Blume) and as *Trema floridana* Britton. The first record (1889) of this plant's occurrence within our border characterizes it as a shrub, which is its usual form. Under the name *Trema floridana* Britton it was first described in 1903 as a tree in Florida. According to J. K. Small (in letter of September 13, 1923) *Trema lamarckiana* (Roemer and Schultes) Blume, occurring naturally on the Bahamas, Cuba, and Santo Domingo to Montserrat and Guadaloupe, has been found in southern Florida.

Family MORACEÆ

MORUS Linnæus

Morus rubra Linnæus. **Red Mulberry.**

RANGE.—From western Massachusetts, Connecticut, and New York (Long Island) to southern Ontario, central Michigan, eastern Iowa, southeastern Minnesota, southeastern South Dakota; eastern Nebraska, eastern Kansas, Oklahoma, and southwestern Arkansas; south to Florida (Biscayne Bay and Cape Romano) and Texas (Devil's River).

NAMES IN USE

Red Mulberry (Me., Vt., Mass., R. I., N. Y., N. J., Pa., Del., Md., Va., W. Va., N. C., Fla., Ala., Ga., Miss., La., Tex., Ark., Ky., Mo., Ohio, Mich., Ill., Ind., Kans., Nebr., Ont.).
Mulberry (Pa., N. C., S. C., Fla., Ala., Ark., Tex., Ky., Mo., Ohio, Ill., Iowa, Nebr.).
Black Mulberry (N. J., Pa., W. Va.).
Virginia Mulberry-tree (Tenn.).
Murier Sauvage (La.).

Morus microphylla Buckley.[26]

RANGE.—From Texas (south from the Colorado River and mountains of western part of the State) and southern New Mexico to Arizona (Santa Rita, Santa Catalina, Dragoon, Chiricahua, and Peloncillo Mountains); Mexico.

NOTE ON NOMENCLATURE.—Formerly designated as *Morus celtidifolia* Humboldt, Bonpland, and Kunth, which is a Mexican species.

NAMES IN USE

Mexican Mulberry (Tex.).
Texan Mulberry (lit.).

Morus alba Linnæus. **White Mulberry.**

RANGE.—China, but widely cultivated and naturalized in the United States.

NAME IN USE

White Mulberry

VARIETIES AND FORMS DISTINGUISHED IN CULTIVATION

Morus alba tatarica (Linnæus) Loudon. **Russian Mulberry.**
Morus alba rosea Loudon.
Morus alba macrophylla (Moretti) Loudon. **Largeleaf Mulberry.**

[26] Britton and Shafer (North Am. Trees, 364, 1908) took up for this species, *Morus microphylla* Buckley in the belief that the tree found within our border has been confused with the Mexican Mulberry, which is distinct from the tree we have.

Morus alba vulgaris tokwa (Siebold) Bur. **Japanese Mulberry.**
Morus alba pyramidalis Seringe.
Morus alba pendula (Dippel) Sudworth.
Morus alba constantinopolitana (Poiret) Loudon.
Morus alba multicaulis (Perrot) Loudon.
Morus alba venosa Delile.

Morus nigra Linnæus. **Black Mulberry.**

RANGE.—Originally a native of Persia and now widely naturalized in Europe. Naturalized at various points in the United States, particularly in the central-eastern and southern States and to some extent in the Pacific coast region.

NAME IN USE

Black Mulberry

PAPYRIUS LaMarck [27]

Papyrius papyrifera (Linnæus) Kuntze. **Paper Mulberry.**

RANGE.—A native of eastern Asia and now naturalized in eastern United States.

NOTE ON NOMENCLATURE.—Formerly designated as *Broussonetia papyrifera* (Linnæus) Ventenat.

NAME IN USE

Paper Mulberry

TOXYLON Rafinesque

Toxylon pomiferum Rafinesque. **Osage-orange.**

RANGE.—From southern Arkansas (south of Arkansas River) through southeastern Oklahoma, central and southern Texas.[28] Widely distributed elsewhere by cultivation.

NOTE ON NOMENCLATURE.—Formerly designated as *Maclura aurantiaca* Nuttall, and by those who do not recognize *Toxylon*, as *Maclura pomifera* Schneider.

NAMES IN USE

Osage-orange (Mass., R. I., N. Y., N. J., Pa., Del., Va., W. Va., N. C., S. C., Ga., Ala., Miss., La., Tex., Ky., Mo., Ohio, Ill., Kans., Nebr., Iowa, Mich.).
Bois D'Arc (La., Tex., Mo.).
Bodeck (Kans.).
Mock Orange (La.).
Bow-wood (Ala.).
Osage Apple-tree (Tenn.).
Yellow-wood (Tenn.).
Hedge (Ill.).
Hedge-plant (Iowa, Nebr.).
Osage (Iowa).
Hedge Apple.
Wild Orange.

VARIETY DISTINGUISHED IN CULTIVATION

Toxylon pomiferum inerme André. **Thornless Osage-orange.**

RANGE.—Known only in cultivation (France).

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[27] It seems proper now to adopt the oldest generic name applied to this group, which is the *Papyrius* of La Marck, established in 1798, in place of the genus *Broussonetia* of L'Héritier, published in 1799, under which the Paper Mulberry has long been known.

[28] In the autumn of 1913 the writer found a dense, island-like stand of this tree covering about an acre of ground at a point about 4 miles southwest of Marathon, Brewster County, southwestern Texas, and 1 mile west of "Fort Pena Colorado." This isolated group, in rich bottom land on Pena Creek, undoubtedly represents an indigenous growth. The trees were 12 to 15 feet high and 2 to 3 inches in diameter.

FICUS Linnæus

Ficus aurea Nuttall. **Golden Fig.**

RANGE.—Southern Florida (shores and islands from Indian River on the east coast, and Tampa Bay on the west coast to the southern Keys); Bahama Islands.

NAMES IN USE

Wild Fig. (Fla.).
India-Rubber-tree (Fla.).
Wild Rubber-tree (Fla.).
Rubber-tree (Fla.).
Golden Fig (Fla.).

Ficus brevifolia Nuttall.[29] **Wild Fig.**

RANGE.—Florida (Biscayne Bay region and Key Largo, Umbrella Key, Boca Checa Key, Pumpkin Key, and Key West); West Indies.

NOTE ON NOMENCLATURE.—Formerly designated as *Ficus populnea* Willdenow, which is a different species.

NAMES IN USE

Wild Fig (Fla.).
India-Rubber-tree (Fla.).
Short-leaved Fig (lit.).

Ficus carica Linnæus. **Common Fig.**

RANGE.—Supposed to be a native of the Mediterranean region. It has been long cultivated in southern United States for its fruit and from these sources it has become sparingly established along roadsides and in old fields from Virginia to Tennessee, Florida, and eastern Texas (J. K. Small).

NAMES IN USE

Fig.
Common Fig.

Family PROTEACEÆ

GREVILLEA Robert Brown

Grevillea robusta A. Cunningham. **Silky Oak.**

RANGE.—A native of Australia. Through frequent planting for ornament in tropical parts of the Gulf region, particularly in Florida, and in southern California, it has escaped from cultivation and appears to be maintaining itself in waste ground at several points in Florida. It is said also to be growing spontaneously in California (Fide Britton and Shafer, opus. cit.).

NAMES IN USE

Australian Silk Oak (lit.).
Silk Oak (lit.).
Silky Oak (lit.).

Family OLACACEÆ

SCHOEPFIA Schreber[30]

Schoepfia chrisophylloides (A. Richard) Planchon. **Whitewood.**

RANGE.—Peninsular Florida (Lee and Dade Counties) and Keys; also in the Bahamas, Jamaica, Cuba, Guatemala.

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[29] Britton and Shafer (North Am. Trees, 370, 1908) believe that the fig-tree referred to as *Ficus populnea* Willdenow has been confused with a similar species found in Porto Rica which should bear the name *Ficus laevigata* Vahl (*Ficus populnea* Willdenow). They have, therefore, taken up for our fig-tree the name *Ficus brevifolia* Nuttall, a conclusion which the writer believes to be correct.

[30] A. W. Chapman (Flor. So. U. S., ed. 3, 63, 1897) first described this species as a small tree in Florida under the name *Schoepfia arborescens* Roemer and Schultes, this probably being the first record of the plant as a tree within our border. It appears to have been recorded next as a tree in Florida by J. K. Small (Flor. So. E. U. S., 1104, 1903) under the name *Schoepfia Schreberi* J. F. Gmelin, a name which, however, was applied to a different plant. Recently Britton and Shafer (North Am. Trees, 375, 1908) characterized it as a tree or shrub of peninsular Florida under its present name.

NAME IN USE

Whitewood

XIMENIA Linnæus

Ximenia americana Linnæus. **Tallow-wood.**

RANGE.—Central to southern Florida (vicinity Eustis, Lake County, to the southern Keys). Occurs also from the Antilles to Brazil, in west tropical Africa, Indian Peninsula, on islands of the Indian Archipelago, in New Guinea, Australia, and on a number of islands in the Southern Pacific Ocean. Not until about 1908 was it known to be a tree within our borders.

NAMES IN USE

Seaside Plum.
Mountain Plum.
Hog Plum.
Wild Olive.
False Sandalwood.
Tallow-wood.

Family POLYGONACEÆ

COCCOLOBIS P. Browne

Coccolobis uvifera (Linnæus) Jacquin. **Seagrape.**

RANGE.—Southern Florida (shores from Mosquito Inlet on the east coast to the southern Keys, and from Tampa Bay on the west coast to Cape Sable); Bermuda and Bahamas Islands, West Indies, and in South America from Columbia to Brazil.

NAMES IN USE

Sea Grape (Fla.).
Seaside Plum.

Coccolobis laurifolia Jacquin. **Pigeon-plum.**

RANGE.—Southern Florida (east coast from Cape Canaveral to the southern Keys, and on the west coast from Cape Romano to Cape Sable); Bahamas, West Indies, and Venezuela.

NAME IN USE

Pigeon Plum (Fla.)

Family NYCTAGINACEÆ

TORRUBIA Vellozo

Torrubia longifolia (Heimerl) Britton.[31] **Blolly.**

RANGE.—Southern Florida (shores on the east coast from Cape Canaveral to the southern islands; especially large on Elliott's and Old Rhodes Keys); West Indies to Brazil.

NOTE ON NOMENCLATURE.—Formerly designated as *Pisonia obtusata* Jacquin, and as *Pisonia longifolia* (Heimer) Sargent.

NAMES IN USE

Pigeon-wood (Fla.).
Beef-wood (Fla.).
Cork-wood (Fla.).
Pork-wood (Fla.).
Blolly (Fla.).

[31] Britton and Shafer (North Am. Trees, 382, 1908) applied to this species the name *Torrubia longifolia* (Heimerl) Britton, their opinion being that the genus *Torrubia* Vallozo better fits the characteristics of Blolly than does *Pisonia* Linnæus.

J. K. Small (in letter of September 13, 1923) informs the writer that *Pisonia rotundata* Griseback, *Torrubia rotundata* (Griseback) Sudworth occurring naturally in Cuba, has been found in southern Florida.

Family MAGNOLIACEÆ

MAGNOLIA Linnæus

***Magnolia grandiflora** Linnæus. **Evergreen Magnolia.**

RANGE.—Coast region North Carolina (south of Cape Fear River) to Florida (Mosquito Inlet and Tampa Bay) and westward in the Gulf Coast region to Texas (Brazos River); through western Louisiana to southern Arkansas.

NOTE ON NOMENCLATURE.—Formerly designated as *Magnolia foetida* (Linnæus) Sargent.

NAMES IN USE

Magnolia (N. C., S. C., Ala., Fla., Miss.,La., Tex.,Ky.), (trade, in part.)
Big Laurel (N. C., S. C., Miss., La.).
Bull Bay (Ala., Ga., Miss.).
Great Laurel Magnolia (Ala.).
Laurel-leaved Magnolia.
Large-flowered Evergreen Magnolia.
Bat-tree.
Laurel Bay.
Laurel (S. C.).
Evergreen Magnolia.
Southern Magnolia (lit. and hort.).

VARIETIES DISTINGUISHED IN CULTIVATION

Magnolia grandiflora lanceolata Aiton. **Exmouth Magnolia.**
Magnolia grandiflora praecox Loudon.
Magnolia grandiflora angustifolia Loudon.
Magnolia grandiflora ferruginea Sims.

Magnolia virginiana [32] Linnæus. **Sweet Bay.**

RANGE.—Not fully determined. In general it occurs from Massachusetts (Essex County) and Long Island (Turtle Pond, Suffolk County) to southeastern Virginia, and westward in Pennsylvania [33] (to Lebanon County). Reported to be rare southward, mainly in the coast region of North Carolina (also in northwestern North Carolina, in Yadkin and Surry Counties—H. M. Curran and W. W. Ashe; Polk County—D. C. Peattie), South Carolina, and Georgia, and believed not to occur in Florida (Sargent).

NOTE ON NOMENCLATURE.—Formerly designated as *Magnolia glauca* Linnæus, its range as then understood extending to southern Florida and westward in the Gulf States into eastern Texas (Trinity River).

NAMES IN USE

Sweet Bay (Mass., R. I., Pa., N. J., N. C., S. C., Ala.).
White Bay (N. C., S. C., Miss., La.).
Swamp Laurel (Mass., N. C., Ga.).
Swamp Sassafras (Del., Pa., Tenn.).
Swamp Magnolia (N. J., Pa., Tenn.).
Magnolia (N. J., Del., Pa.).
White Laurel (Del.).
Beaver-tree (Del., S. C.).
Bay (S. C.).
Swamp Bay.
Laurel-Magnolia.
Indian Bark.
Small Magnolia.

VARIETIES DISTINGUISHED IN CULTIVATION

Magnolia virginiana longifolia (Aiton) Sudworth.
Magnolia virginiana major (Sims) Sudworth. [34] **Thompson Magnolia (Hybrid).**

Magnolia virginiana australis Sargent. **Sweet Bay.**

RANGE.—From southeastern North Carolina (vicinity of Wilmington) and southwards in the coast region of South Carolina and Georgia (to Randolph and Carroll Counties), throughout Florida, and westward in the Gulf States to

[32] *Magnolia glauca* Linnæus was published in 1763, but as *Magnolia virginiana* Linnæus, now believed to represent the same plant, was published 10 years earlier, in 1753, the latter name is the older and must be adopted.

[33] Britton and Shafer (op. cit., 388).

[34] According to the best information available this magnolia is a hybrid between *Magnolia virginiana* Linnæus and *Magnolia Thompsoniana*, *Magnolia major*, *Magnolia glauca* var. *major* Sims, *Magnolia g'auca Thompsoniana* Lavall, and is supposed to have originated in an English nursery many years ago.

eastern Texas (Nueces River, San Augustine County); in Alabama (extending to Macon and Dallas Counties, and also to Sand and Lookout Mountains); in Mississippi, to the northeast corner of the State, and in western Louisiana (to Winn and Natchitoches Parishes—Sargent).

NOTE ON NOMENCLATURE.—Formerly included as a form of *Magnolia glauca* Linnæus.

NAME IN USE

Sweet Bay

***Magnolia acuminata** Linnæus. **Cucumber Magnolia.**

RANGE.—From western New York through southern Ontario and south to southern Ohio, Illinois and Indiana, and south in the Appalachian Mountains to northern Georgia, northern Alabama and northeastern, northwestern, and south-central Mississippi (Meridian), central Kentucky and Tennessee, northeastern, southern, and southwestern Arkansas, and eastern Oklahoma, and southwestern Missouri (Barry County).

NOTE.—*Magnolia acuminata ozarkensis* Ashe, abundant on Pine Creek, Johnson County, Ark., is distinguished from the species by its slightly broader leaves, which are essentially smooth and green on the lower surface.

NAMES IN USE

Cucumber-tree (R. I., Mass., N. Y., Pa., D. C. (cult.). N. C., S. C., Ala., Miss., La., Ky., Ark., Va., W. Va., Ohio, Ind., Ill., and hort.).
Mountain Magnolia (Miss., Ky.).
Cucumber (Va., W. Va., N. C., Tenn., Ky., and trade).
Black Lin (W. Va.).
Magnolia (Ark., trade).
Pointed-leaved Magnolia (lit.).
Yellow Linn (Ky., W. Va.).
Cowcumber (Va., Tenn.).
Yellow Poplar (trade).
Wauhoo.
Elkwood.
Cucumber Magnolia.
Blue Magnolia.

Magnolia acuminata ludoviciana Sargent. **Cucumber Magnolia.**

RANGE.—Louisiana (central-eastern border, in West Feliciana Parish near the towns of Catalpa and St. Francisville.—Sargent).

NAMES IN USE

Cucumber Magnolia.
Cucumber Tree (lit.).

Magnolia cordata Michaux.[35] **Yellow-Flower Magnolia.**

RANGE.—The typical form of this magnolia, unknown in the wild state since its first discovery, and since preserved for over 100 years in cultivation, was, in 1913, rediscovered by L. A. Berkmans (fide C. S. Sargent) growing wild in the valley of the Savannah River, Georgia (Spears Plantation, 6 miles south, and Goshen Plantation, 16 miles south of Augusta; also in the vicinity of Mayfield and Bath); Alabama (Sumpter and Choctaw Counties—W. W. Ashe). Previous to this rediscovery, individual wild trees have been found in the mountains from North Carolina to Georgia and Alabama that in foliage and flowers somewhat resembled the cultivated tree, but none of these wild trees are just like the garden form. The rediscovered form is said to be a shrub under 8 feet in height, while the long-known cultivated representative is often 25 or 30 feet high.

NOTE ON NOMENCLATURE.—Formerly designated as *Magnolia acuminata cordata* (Michaux) Sargent.

NAMES IN USE

Cucumber-tree (Va., N. C., Miss., La.).
Yellow-flowered Magnolia (Ala., La.).
Yellow-flowered Cucumber-tree (Ala.).
Yellow Cucumber-tree (Ala.).
Heart-leaved Cucumber-tree (N. C.).

[35] J. K. Small (Flor. So. E. U. S., 451, 1903) designates this and the Cucumber-tree as *Tulipastrum acuminatum* (L.) Small and as *Tulipastrum cordatum* (Michaux) Small, the reason for this being that the slender deciduous styles of the flowers of these two trees constitute a characteristic of the genus *Tulipastrum* Spach. Quite generally, however, this genus has not been recognized as distinct from *Magnolia* of Linnæus, established many years before.

Magnolia macrophylla Michaux. **Bigleaf Magnolia.**

RANGE.—From North Carolina (southern Allegheny Mountains) to southeastern Kentucky, to middle and western Florida and southern Alabama (and to Jefferson County); through southern and northeastern Mississippi into Louisiana.

NAMES IN USE

Large-leaved Cucumber-tree (Ala., Miss., La.).
Great-leaved Magnolia (N. C., Miss., La.).
Large-leaved Umbrella-tree (N. C., Tenn.).
Cucumber (Ky., La.).
Cucumber-tree (Fla.).
Long-leaved Magnolia (S. C.).
Cowcumber (La.).
Bigleaf Magnolia (lit.).
Elk-bark.
Silver-leaf.
Big Bloom.

Magnolia ashei C. A. Weatherby.

RANGE.—Western Florida (Walton, Okaloosa, and Santa Rosa Counties).

NOTE ON NOMENCLATURE.—Formerly (prior to 1926) not distinguished from *Magnolia macrophylla* Michaux, from which it differs in its smaller flowers, narrower and smaller fruit, and much slenderer twigs.

NAME IN USE

Cucumber-tree (Fla.)

Magnolia tripetala Linnæus. **Umbrella Magnolia.**

RANGE.—From southern Pennsylvania (throughout the Allegheny Mountains and nearly to the coast) to southern Alabama; west to central Kentucky, Ohio (Jackson County), and Tennessee and northeastern Mississippi; central and southwestern Arkansas; southeastern Oklahoma.

NOTE ON NOMENCLATURE.—Formerly designated as *Magnolia umbrella* LaMarck.

NAMES IN USE

Umbrella-tree (Pa., W. Va., N. C., S. C., Ala., Miss., La.).
Cucumber (Ky.).
Cucumber Tree (Ky.).
Magnolia (W. Va.).
Elkwood.
Elk Browse (N. C.).
Wahoo (W. Va.).
Umbrella Magnolia.

Magnolia fraseri Walter. **Mountain Magnolia.**

RANGE.—Southwestern Virginia and northeastern Kentucky (mountains) to northern Georgia and west through eastern Tennessee and northern Alabama (probably to northern Mississippi); Louisiana (West Feliciana Parish).

NAMES IN USE

Long-leaved Cucumber-tree (N. C., S. C.).
Ear-leaved Umbrella-tree (N. C., S. C., Miss.).
Ear-leaved Cucumber-tree (N. C., Fla.).
Indian Physic (N. C., Tenn.).
Indian Bitters (N. C.).
Cucumber (Ky., N. C.).
North Carolina Bay-tree (W. Va.).
Water Lily-tree.
Mountain Magnolia.
Whahoo (N. C.).
Mountain Cucumber (N. C.).
Fraser's Magnolia (lit.).
Fraser Umbrella (lit.).
Cucumber-tree (N. C.).
Umbrella-tree (N. C.).
Ear-leaved Magnolia (W. Va.).

Magnolia pyramidata Pursh.[36] **Mountain Magnolia.**

RANGE.—From southern Georgia through western Florida to southern Alabama.

NOTE ON NOMENCLATURE.—Formerly included as a form of *Magnolia fraseri* Walter, from which it is specifically distinct.

NAMES IN USE

Pyramid Magnolia (lit.). Mountain Magnolia.

LIRIODENDRON Linnæus

***Liriodendron tulipifera** Linnæus. **Yellow Poplar.**

RANGE.—From Rhode Island to southwestern Vermont and west to Lake Michigan (through southern Michigan as far north as the Grand River); south to northern Florida (Florida National Forest—Alaqua Creek), southern Alabama and Mississippi; west of Mississippi River in northeastern Louisiana (Ouachita Parish on Castor Bayou), southeastern Missouri and northeastern Arkansas.

NAMES IN USE

Tuliptree (Vt., Mass., R. I., Conn., N. Y., N. J., Del., Pa., Va., W. Va., D. C., N. C., S. C., Ga., Ark., Ky., Tenn., Ohio, Ind., Ill., Ont., and hort.).
White-wood (Vt., Mass., R. I., Conn., N. Y., N. J., Del., S. C., Ky., Ohio, Ill., Mich., Ont., and trade).
Yellow Poplar (N. Y., N. J., Pa., Del., Md., Va., W. Va., N. C., S. C., Ala., Ga., La., Ark., Ky., Tenn., Ohio, Ind., Mo., trade).
Tulip Poplar (Del., Pa., N. C., S. C., Ill.).
Poplar (R. I., Del., W. Va., N. C., S. C., Tenn., Ark., Fla., Ohio, trade).
White Poplar (Pa., Ky., Ind., W. Va., N. C.).
Blue Poplar (Del., W. Va., Tenn.).
Hickory Poplar (Va., W. Va., N. C.).
Popple (R. I.).
Cucumber-tree (N. Y.).
Canoe-wood (Tenn.).
Old-Wife's Shirt-tree (Tenn.).
Ko-yen-ta-ka-ah-ta="White-tree" (Onondaga Indians, N. Y.).
Basswood (Ohio).
Sap Poplar (Ga.).
Canary Yellow-wood (English trade-name).
Tulipwood (Eng. trade).
Soft Yellow Poplar (trade).
Saddle-tree.
Saddle-leaf.

VARIETIES DISTINGUISHED IN CULTIVATION

Liriodendron tulipifera obtusiloba Michaux.
Liriodendron tulipifera pyramidalis Dippel. **Pyramidal Tuliptree.**
Liriodendron tulipifera penache Ellwanger and Barry. **Variegated Tuliptree.**
Liriodendron tulipifera aureo-maculata (Arboretum Kew.) Sudworth.

Family ANONACEÆ

ASIMINA Adanson

Asimina triloba (Linnæus) Dunal. **Papaw.**

RANGE.—From western New Jersey and western New York to the north shores of Lake Ontario; from eastern and central Pennsylvania west through southern Michigan, southwestern Iowa, southeastern Nebraska, eastern Kansas, eastern Oklahoma and southwestern Arkansas; south to northern Florida and eastern Texas (Harrison and Grayson Counties).

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[36] Originally described as *Magnolia pyramidata* Pursh in 1814. In 1818, Thomas Nuttall, and in 1840, John Torrey and Asa Gray, considered it a variety of what we now call *Magnolia fraseri* Walter, being characterized then as *Magnolia auriculata β pyramidata*, based on *Magnolia pyramidata* Pursh. This designation, however, seems to have been neglected until from about 1900 to 1902, when specimens collected for the Biltmore Herbarium (North Carolina) again brought to light the specific characteristics and distinct range of this tree. It is closely related to *Magnolia fraseri* Walter, from which it differs in its smaller flowers and rhombic-ovate leaves. In 1903 J. K. Small (Flor. So. E. U. S., 452, 1903) took up Pursh's original name for this tree.

NAMES IN USE

Papaw (R. I., Del., N. Y., N. J., D. C., Va., W. Va., N. C., S. C., Ga., Miss., La., Ky., Ohio, Ill., Ind., Mo., Iowa, Kans., Nebr.).
Custard Apple (Ont., Del., Pa., Ohio, S. C., Miss.).
Banana (Ark.).
False Banana (Ill.).
Jasmine (La.).
Jasminier (La.).
Fetid Shrub (N. C.).
North American Papaw (lit.).
Common Papaw.
Wild Banana.

ANONA Linnæus

Anona glabra Linnæus. **Pond-apple.**

RANGE.—Southern Florida (shores on the east coast from Indian River, and on the west coast from Manatee River to the southern Keys); Bahama, San Domingo, St. Thomas, and St. Croix Island.

J. K. Small (in letter of September 13, 1923) informs the writer that *Anona squamosa* Linnæus, native of the West Indies, has become established in southern Florida. It is commonly called Sweetsop.

NAMES IN USE

Pond Apple (Fla.).
Custard Apple (Fla.).

Family LAURACEÆ

PERSEA Miller [37]

Persea borbonia (Linnæus) Sprengel. **Red Bay.**

RANGE.—Coast region from Virginia to Florida (Biscayne Bay and Cape Romano) and the Gulf region to eastern Texas (Brazos River); northward through Louisiana to southern Arkansas.

NOTE ON NOMENCLATURE.—Formerly designated as *Persea carolinensis* Née.

NAMES IN USE

Red Bay (N. C., S. C., Ga., Fla., Ala., Miss., La.).
Bay Galls (Tenn.).
Laurel-tree (La.).
Laurier Petit Magnolia (La.).
Florida Mahogany (Fla.).
Sweet Bay (Fla.).
False Mahogany (lit.).
Isabella-wood.
White Bay.
Tiss-wood.

Persea pubescens (Pursh) Sargent.[38] **Swamp Bay.**

RANGE.—South Atlantic and Gulf region from North Carolina to southern Florida, Alabama, Mississippi, and eastern Louisiana (Cocks).

NAMES IN USE

Swamp Red-Bay (Fla.).
Bay (Ga.).
Swamp Bay.

[37] *Persea littoralis* Small, a shrub or small tree, occurring in eastern Florida, and *Persea humilis* Nash, also a shrub or tree occurring at interior points in peninsular Florida, may, with further investigation, be worthy or recognition as trees.

[38] This name is based on *Laurus Carolinensis β pubescens* Pursh (1814). According to the Vienna rules, however, such a name must be abandoned and the oldest specific name substituted. In obedience to this rule, C. S. Sargent (Bot. Gaz., LXVII, 229, 1919) has supplanted *Persea pubescens* (Pursh) Sargent with *Persea palustris* (Rafinesque) Sargent, which is based on *Tamala palustris* Rafinesque (1838). The writer prefers to maintain the oldest name for this species, which appears to be admissible under the American rules of nomenclature.

Persea gratissima Gaetner. **Avocado.**

RANGE.—Central America. Escaped from cultivation in peninsular Florida and Keys, and apparently naturalized.

NOTE ON NOMENCLATURE.—Designated by some authors as *Persea persea* (Linnæus) Cockerell, which is based on *Laurus persea* Linnæus, the oldest name for this tree.

NAMES IN USE

Avocado.
Avocado Pear.
Alligator Pear.

OCOTEA Aublet

Ocotea catesbyana (Michaux) Sargent. **Lancewood.**

RANGE.—Southern Florida (shores and islands on the east coast south of Cape Canaveral and on the west coast south of Cape Romano); Bahamas.

NOTE ON NOMENCLATURE.—Formerly designated as *Nectandra willdenoviana* Meisner.

NAMES IN USE

Lancewood (Fla.).
Sweetwood (Jamaica).
Cigua (Cuba).
Avispillo (Porto Rico).
Canela (Porto Rico).

UMBELLULARIA Nuttall

***Umbellularia californica** (Hooker and Arnott) Nuttall. **Oregon Myrtle.**

RANGE.—From Oregon (Coos River) through California (coast ranges and western slopes of Sierra Nevada to southern slopes of San Bernardino Mountains).

NAMES IN USE

California Laurel (Calif.).
Mountain Laurel (Calif.).
California Bay-tree and Bay-tree (Calif.).
Myrtle-tree (Oreg.).
Cajeput (Oreg., Calif.).
California Olive (Oreg., Calif.).
Myrtle (Oreg.).
Spice-tree (Oreg., Calif.).
Laurel (Calif.).
Oreodaphne (Calif.).
California Sassafras.
Pepperwood (Calif.).
Yellow Myrtle, Black Myrtle, and White Myrtle (Oreg.).
Bay (Calif.).
Bay Laurel (Calif.).
Oregon Myrtle (trade).

SASSAFRAS Née and Ebermaier

Sassafras variifolium (Salisbury) Kuntze. **Sassafras.**

RANGE.—From southern Maine and eastern Massachusetts through southern Vermont, southern Ontario, and central Michigan (on east up to Traverse County), southeastern Iowa to eastern Kansas, Arkansas, and Oklahoma; south to central Florida (Orange County) and eastern Texas (Brazos River).

NOTE ON NOMENCLATURE.—Formerly and still designated as *Sassafras officinale* Née and Ebermaier. *Sassafras variifolium* (Salisbury) Kuntze, based on the oldest binomial applied to this species, is maintained here in order to avoid using the duplicate binomial *Sassafras sassafras* (Linnæus) Karsten, the oldest name for this tree.

NAMES IN USE

Sassafras (Vt., N. H., Mass., Conn., R. I., N. Y., N. J., Pa., Del., Md., Va., W. Va., N. C., S. C., Ga., Fla., Miss., La., Tex., Ark., Ky., Mo., Ill., Ind., Kans., Nebr., Mich., Ohio, Ontario).
Saxifrax (Fla.).
Saxifrax-tree (Tenn.).
Sassafac (W. Va.).
Sassafrac (Del.).
Gumbo file (La., Negro dialect).
Wah-eh-nah-kas="Smelling stick" (Onondaga Indians (N. Y.).
White Sassafras (N. C.).
Red Sassafras (N. C.).
Ague-tree (lit.).
Common Sassafras (lit.).
Cinnamon-wood.

MISANTECA Chamisso and Schlechtendal

Misanteca triandra (Swartz) Mez.

RANGE.—Southern Florida (Dade County, on a hammock at roadside between Miami and Homestead; only two plants now known in Florida, where the species was first detected in 1910; added to our tree flora in 1911).[39] Occurs in Cuba and in Jamaica.

CINNAMOMUM Linnæus

Cinnamomum camphora Née and Ebermarer.

RANGE.—Native of China and Japan. Extensively planted for ornament in the Gulf States from Florida to southeastern Texas and sparingly naturalized in Florida (Fide J. K. Small).

Family CAPPARIDACEÆ

CAPPARIS Linnæus

Capparis jamaicensis Jacquin. **Caper-tree.**

RANGE.—Southern Florida (coast from Cape Canaveral to the southern Keys); West Indies.

NAME IN USE

Caper-tree (Fla.)

Capparis cynophallophora Linnæus.

RANGE.—Florida (Kitchen-middens of eastern coast; hammocks of Everglade Keys and those of Florida Keys); South America.

Family MORINGACEÆ

MORINGA LaMarck

Moringa pterygosperma Gærtner. **Horseradish-tree.**

RANGE.—Southern Florida (escaped from cultivation in Florida, where it was introduced from the West Indies). Native of southern Asia.

NOTE ON NOMENCLATURE.—The oldest name for this tree is *Moringa Moringa* (Linnæus) Small, which is based on *Guilandina Moringa* Linnæus.

NAME IN USE

Horseradish-tree

[39] C. S. Sargent (Trees and Shrubs, II, Pt. III, 135, 1911); J. K. Small (Flor. So. E. U. S. ed. 2, 823, 1913)

Family HAMAMELIDACEÆ

HAMAMELIS Linnæus

Hamamelis virginiana Linnæus.[40] **Witch-hazel.**

RANGE.—From Nova Scotia, New Brunswick, and valley of the St. Lawrence River to Southern Ontario, southern Wisconsin and Minnesota, and northeastern Iowa; south to Georgia (Taylor, Richmond, and Dekalb Counties) and southern Arkansas.

NAMES IN USE

Witch Hazel (Me., Vt., Mass., R. I., Conn., N. Y., N. J., Del., Pa., Va., W. Va., N. C., S. C., Ga., Ala., Fla., Miss., La., Tex., Ky., Mo., Ill., Wis., Iowa, Ohio, Mich., Nebr.).
Oe-eh-nah-kwe-ha-he- "Spotted stick" (Onondago Indians, N. Y.).
Winter Bloom, Snapping Hazel, Spotted Alder (lit. of domestic medicine).
Common Witch-hazel.
Monkey-faces.

Hamamelis macrophylla Pursh. **Witch-hazel.**

RANGE.—Georgia and Florida to eastern Texas, southern Arkansas, and southeastern Oklahoma (Rich Mountain).

NAME IN USE

Witch-hazel

LIQUIDAMBAR Linnæus

***Liquidambar styraciflua** Linnæus. **Red Gum.**

RANGE.—From Connecticut (Fairfield County) to southeastern Missouri, Arkansas and Oklahoma; south to Florida (Cape Canaveral and Tampa Bay) and Texas (Trinity River); occurring also in central and southern Mexico and Guatemala.

NAMES IN USE

Sweet Gum (Mass., R. I., N. Y., N. J., Pa., Del., Va., W. Va., N. C., S. C., Ga., Ala., Miss., La., Tex., Ark., Ky., Tenn., Mo., Ill., Ind., Ohio, and hort.).
Liquidambar (R. I., N. Y., N. J., Pa., La., Tex., Ohio, Ill.).
Red Gum (Md., Va., Ky., Ala., Miss., Tex., La., trade).
Gum (Va., Ky., trade).
Gum-tree (S. C., La.).
Bilsted (N. J.).
Star-leaved Gum.
Satin Walnut (lumber markets).
Satinwood (Miss.).
American Mahogany (Miss.).
Hazelwood (trade).
Alligator Wood (N. J., W. Va.).
Delta Red Gum (trade).
White Gum.
Opossum-tree.
Alligator-tree.
Incense-tree.
Copalm.
Sap.
Sap Gum (trade).

[40] C. S. Sargent (Trees and Shrubs, II, Pt. III, 137, 1911) has segregated from this species *Hamamelis vernalis* Sargent, which is now known only as a shrub (5 to 6 feet high) occurring in southern Missouri, Arkansas, and Oklahoma. It differs from *Hamamelis virginiana* Linnæus in the bright red color of the inside of the calyx, pale under surface of the leaves, density and permanence of the pubescence on the leaves and twigs, in the time of flowering (end of January to the end of March), and in its habit of growing only in the gravelly beds and borders of streams, the Witch-hazel usually occurring in upland woods and old fields.

Family PLATANACEÆ

PLATANUS Linnæus

***Platanus occidentalis** Linnæus. **Sycamore.**

RANGE.—Southwestern Maine to northern Vermont, southern Ontario and Michigan, central and southern Iowa, southeastern Nebraska, eastern Kansas, Oklahoma, and southwestern Arkansas; south to western Florida (Gadsden County), central Alabama, and Mississippi, to western Texas (Zavalla County).

NAMES IN USE

Sycamore (Vt., N. H., Mass., Conn., R. I., N. Y., N. J., Pa., Del., Va., W. Va., N. C., S. C., Ga., Fla., Ala., Miss., La., Tex., Ky., Ark., Mo., Ill., Ind., Iowa, Kans., Mich., Wis., Ohio, Ontario, trade).
Button-wood (Vt., N. H., R. I., N. Y., N. J., Pa., Del., W. Va., S. C., Ala., Miss., La., Tex., Ark., Mo., Ill., Mich., Minn., Ohio, Ontario).
Buttonball-tree (Mass., R. I., Conn., N. Y., N. J., Pa., Del., Miss., La., Mo., Ill., Iowa, Mich., Nebr., Ohio).
Buttonball (R. I., N. Y., Pa., Fla.).
Plane-tree (R. I., Del., S. C., Kans., Nebr., Iowa).
Water Beech (Del.).
Platane (La.).
Cotonier (La.).
Bois puant (La.).
Oo-da-te-cha-wunnes="Big stockings" (Indiana, N. Y.).
American Planetree (lit. and hort.).

Platanus occidentalis glabrata (Fernald) Sargent. **Sycamore.**

RANGE.—Western Texas (Kerr, Llano, Bandera, Uvalde, Kendall, Valverde, and Zavalla Counties); southeastern Oklahoma (Big Creek); Mexico (Coahuila and Nuevo Leon).

NOTE ON NOMENCLATURE.—Specimens from Mexico first described in 1901 as *Platanus glabrata* Fernald.

NAME IN USE

Sycamore

Platanus occidentalis attenuata Sargent. **Sycamore.**

RANGE.—Reported to occur in southern Indiana (Wells County); Missouri (Shannon County); Oklahoma (Kay County); Alabama (Dallas County); Mississippi (Rankin, Hinds County); and in Texas (Matagorda County).

NOTE ON NOMENCLATURE.—Formerly included as a form of *Platanus occidentalis* Linnæus.

NAME IN USE

Sycamore

Platanus racemosa Nuttall. **California Sycamore.**

RANGE.—California (from the lower Sacramento River through interior valleys and coast ranges) to Lower California (San Pedro Martir Mountain).

NAMES IN USE

Sycamore (Calif.).
Buttonwood.
Buttonball-tree (Calif.).
Buttonball (Calif.).
Western Sycamore (lit.).
Planetree (lit.).
California Sycamore (lit.).
California Planetree (lit. and hort.).

Platanus wrightii S. Watson. **Arizona Sycamore.**

RANGE.—Southwestern New Mexico and southern and northern (Oak Creek Canyon) Arizona; Mexico (Sonora).

NAMES IN USE

Sycamore (Ariz.).
Arizona Sycamore (lit.).
Arizona Plane-tree (lit.).

Family ROSACEÆ

VAUQUELINIA Correa

Vauquelinia californica (Torrey) Sargent.

RANGE.—Southern Arizona (Rincon Mountains; arborescent on Santa Catalina Mountains); southwestern New Mexico; Mexico (Sonora) to Lower California.

NOTE ON NOMENCLATURE.—Formerly designated as *Vauquelinia torreyi* S. Watson.

NAME IN USE

Vauquelinia (lit., Ariz., Santa Catalina Mountains).

LYONOTHAMNUS Gray

Lyonothamnus floribundus Gray. **Santa Cruz Ironwood.**

RANGE.—Santa Catalina, Santa Cruz, San Clemente, Santa Rosa Islands off the southern coast of California.

NAMES IN USE

Ironwood (Calif.).
Lyon's Ironwood (lit.).
Santa Cruz Ironwood.
Catalina Lyonshrub (lit.).

MALUS Miller [41] Apple

Malus angustifolia (Aiton) Michaux.[42] **Narrowleaf Crab Apple.**

RANGE.—From southeastern Virginia (coast region) to western Florida, and westward in southern Alabama and Mississippi to northwestern Louisiana (Winn County); in the Southern Atlantic States, inland to the Appalachian Mountains; southern Illinois [Richland (Robert Ridgway), Pope, and Johnson Counties].

NOTE ON NOMENCLATURE.—Formerly, and by some authors still, designated as *Pyrus angustifolia* Aiton.

NAMES IN USE

Southern Crab Apple (N. C., Ala., Miss., La.).
American Crab Apple (Miss.).
Narrowleaf Crab (Ala.).
Crab Apple (N. C., S. C., Ga.).
Wild Crab Apple.
Narrowleaved Crab Apple (N. C.).
Narrowleaved Crab (S. C.).
Crabtree (Va., Fla.).

Malus glaucescens Rehder. **Crab Apple.**

RANGE.—Western New York to southern Ontario, western Pennsylvania, and Ohio; Virginia (Tazewell County); North Carolina (Mitchell County); Alabama (Dekalb County).

NAMES IN USE

Crab Apple.
Dawson Crab.

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[41] Formerly the species now included in the genus *Malus* (apples) were combined with the pears under the genus *Pyrus* (pears).

[42] Alfred Rehder (in Sargent, Trees and Shrubs, II, Pt. IV, 229, 1913) believes that the Narrow-leafed Crab, *Pyrus angustifolia* Aiton=*Malus angustifolia* (Aiton) Michaux, is the same as *Pyrus coronaria* Linnæus, the name which has long been applied to the Sweet Crab. Accordingly, he would restore *Pyrus coronaria* Linnæus=*Malus coronaria* (Linnæus) Miller, to the Narrow-leafed Crab. A form with slender pendulous branches is distinguished as *Malus angustifolia* Rehder.

Malus glabrata Rehder. **Crab Apple.**

RANGE.—Western North Carolina (near Biltmore, Buncombe County; Jackson and Macon Counties). Range imperfectly known at present.

NAME IN USE

Crab Apple

Malus coronaria (Linnæus) Miller.[43] **Sweet Crab Apple.**

RANGE.—From western New York through southern Ontario, Ohio, southern Michigan, Indiana, Illinois, and southern Wisconsin and southward to Missouri (Jackson and Butler Counties), Pennsylvania northern Delaware, and in the Appalachian Mountains to North Carolina.

NOTE ON NOMENCLATURE.—Formerly, and by some authors still, designated as *Pyrus coronaria* Linnæus.

NAMES IN USE

American Crab (R. I., N. J., Del., Pa., Ill., Ohio, Ontario, Mich.).
Sweet-scented Crab (Mass., Del., Pa., N. C., Ill., Ohio).
Crab Apple (Ky., Mo., Ill., Ohio).
Wild Crab (N. Y., Ill., Ind., Wis., Mo.).
Crab (W. Va., N. C., Wis.).
Fragrant Crab.
Garland Tree (lit.).
Sweet Crab Apple.
Wild Sweet Crab (lit.).

Malus coronaria elongata Rehder. **Sweet Crab Apple.**

RANGE.—Virginia (Peak Mountain, Pulaski County); North Carolina (vicinity of Highlands, Macon County); West Virginia (near Elkins and White Sulphur Springs); southern Ohio (Lorain County); Georgia (Rabun County); New York (Erie and Ontario Counties; also near Olean and between Salamanca and Olean, Cattaraugus County); southern Illinois (Richland County, in the region of Olney—fide Robt. Ridgway).

NOTE ON NOMENCLATURE.—Formerly designated as *Malus elongata* Ashe.

NAME IN USE

Sweet Crab Apple

Malus bracteata Rehder. **Crab Apple.**

RANGE.—Kentucky (Ohio County); Tennessee; Missouri (St. Louis and Dunklin Counties); North Carolina (Buncombe, Macon, and Bladen Counties); Georgia (Rabun and Richmond Counties); Florida (Gadsden County).

NAME IN USE

Crab Apple

Malus platycarpa Rehder.[44] **Crab Apple.**

RANGE.—Known now only from Ohio (vicinity of Youngstown, Mahoning County); Kentucky (vicinity of Olympia, Bath County); West Virginia (Mercer Springs, Mercer County); North Carolina (vicinity of Franklin, Macon County).

NAME IN USE

Crab Apple

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[43] See footnote 42. Rehder's analysis (l. c.) of the technical synonymy of the Sweet Crab showed the latter to be without a scientific name, which he supplied when he named it *Malus fragrans*, in 1913.

[44] A variety of this crab-tree is *Malus platycarpa Hoopesii* Rehder, long known only in cultivation, lately has been found in a wild state in southern Illinois (Richland County) by Robt. Ridgway. A single tree, originally from the nursery of Hoopes Brothers and Thomas, West Chester, Pa., is growing in the Arnold Arboretum, near Boston, Mass. (Alfred Rehder, op. cit., II, Pt. III, 142; Pt. IV, 227, 1911.)

Malus lancifolia Rehder. **Lanceleaf Crab Apple.**

RANGE.—From Pennsylvania (northeastern to western and southwestern sections of State) to West Virginia (Randolph and Greenbrier Counties); Virginia (Peak Mountain, Pulaski County); western North Carolina (mountains), northeastern Kentucky, southern Ohio, Indiana (Delaware County), and southern Illinois (Gallatin, Pope, Richland Counties); detected also in Missouri (Jackson and Wayne Counties).

NAME IN USE

Lanceleaf Crab Apple

Malus ioensis Britton. **Crab Apple.**

RANGE.—From southeastern Minnesota and southern Wisconsin southward to Iowa, eastern Nebraska, Missouri, Illinois, and Indiana (Huntington County).

NAMES IN USE

Iowa Crab Apple. Prairie Crab Apple (lit.).
Crab Apple.

Malus ioensis palmeri Rehder.[45] **Crab Apple.**

RANGE.—Missouri (Jasper, Jackson, Dunklin, Cass, Grandin, Clarke, Stoddard, and Marion Counties); Oklahoma (Gray County); Arkansas (Clay and Hempstead Counties); southern Illinois (Richland County).

NAMES IN USE

Palmer Crab Apple. Crab Apple.

Malus ioensis texana Rehder.[46] **Crab Apple.**

RANGE.—Texas (known now locally only from Blanco, Kendall, and Kerr Counties).

NAME IN USE

Crab Apple

Malus ioensis creniserrata Rehder. **Crab Apple.**

RANGE.—Louisiana (Rapides and Acadia Parishes).

NAME IN USE

Crab Apple

Malus ioensis bushii Rehder. **Crab Apple.**

RANGE.—Missouri (Wayne and Shannon Counties).

NAME IN USE

Crab Apple

VARIETY DISTINGUISHED IN CULTIVATION

Malus ioensis plena Rehder. **Bechtel Crab.**

[45] It differs from the species chiefly in its smaller oblong more thinly pubescent leaves, which are rounded at the top end (Rehder).

[46] It differs from the species chiefly in its smaller and much wider leaves, which are scarcely lobed and densely hairy when fully mature (Rehder).

Malus soulardii (Bailey) Britton.[47] **Soulard Crab Apple.**

RANGE.—Minnesota to eastern Texas. Occurs rather sparingly.
NOTE ON NOMENCLATURE.—Formerly designated as *Pyrus Soulardii* Bailey.

NAMES IN USE

Soulard Crab Apple. Soulard Crab (lit.).

Malus pumila Miller. **Wild Apple.**

RANGE.—Native of western Asia. Widely naturalized through its escape from cultivation, occurring sometimes mingled with native forest trees and along roadsides and in abandoned old fields.
NOTE ON NOMENCLATURE.—Formerly designated as *Pyrus malus* Linnæus.

NAME IN USE

Wild Apple

Malus rivularis (Douglas) Roemer.[48] **Oregon Crab Apple.**

RANGE.—From the Aleutian Islands south along the coast and islands of Alaska and British Columbia through western Washington and Oregon to California (Sonoma and Plumas Counties).
NOTE ON NOMENCLATURE.—Formerly designated as *Pyrus rivularis* Douglas.

NAMES IN USE

Oregon Crab-apple (Calif., Wash., Oreg.). Crab or Wild Apple.
Oregon Crab (lit.).

×**Malus dawsoniana** Rehder. **Dawson Crab Apple (Hybrid).**

RANGE.—Known now only from a single tree growing in the Arnold Arboretum, near Boston, Mass., the parent of this tree probably growing wild in Oregon.
NOTE ON NOMENCLATURE.—Supposed to be a hybrid between *Malus rivularis* (Douglas) Roemer and *Malus communis* Poiret.[49]

NAMES IN USE

Dawson Crab Apple. Dawson Crab (lit.).

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[47] Some authors consider this a natural hybrid between *Malus pumila* Miller, the common apple-tree (as escaped from cultivation), and *Malus ioensis* Britton.

[48] Britton and Shafer (North Am. Trees, 435, 1908) have taken up for this tree the name *Malus diversifolia* (Bongard) Roemer, based on *Pyrus diversifolia* Bongard which was published in 1833, the year also in which *Pyrus rivularis* Douglas was established and on which *Malus rivularis* (Douglas) Roemer is based. There would therefore seem to be no good reason for adopting *Malus diversifolia* (Bongard) Roemer except in case it can be shown that *Pyrus diversifolia* Bongard was published earlier in 1833 than was *Pyrus rivularis* Douglas. C. S. Sargent (Man. N. A. Trees, 2nd ed., 389, 1922) has taken up for this tree *Malus fusca* Schneider (Ill. Handb. Laubh., Band I, 723, 1906), which is apparently based on "*Pyrus fusea*" Rafinesque (Med. Fl. II, 254, 1830). Obviously "*fusea*" was meant to be written *fusca*, a correction that has been commonly accepted. Professor Sargent (Silva N. A., IV, 77, 1892) cites "*Pyrus fusca* Rafinesque" as a synonymn of *Pyrus rivularis* Douglas, on the strength of which Schneider (l. c.) seems to have recognized *Pyrus fusca* Rafinesque as the oldest name for the Oregon Crab. Inasmuch, however, as the description accompanying Rafinesque's name reads "(Oregon Crabapple) has brown acid pulpy fruit, wood very hard, used for wedges," it would seem doubtfully to establish the identity of this name, which the writer hesitates to accept as valid.

[49] Alfred Rehder (in Sargent, Trees and Shrubs, II, Pt. I, 23, 1907) writes that Jackson Dawson raised the tree now known from seed sent by C. G. Pringle from Oregon in 1881 to the Arnold Arboretum. It is presumed that the tree which bore this seed was growing wild and that it was a natural hybrid.

SORBUS Linnæus.[50] Mountain Ash

Sorbus americana Marshall.[51] Mountain-ash.

RANGE.—From Newfoundland to Manitoba and south through Quebec and Ontario, Great Lake region to Minnesota, and high elevations in northeastern United States to eastern Tennessee, Virginia, and North Carolina.

NOTE ON NOMENCLATURE.—Formerly designated as *Pyrus americana* (Marshall) de Candolle.

NAMES IN USE

Mountain Ash (Vt., N. H., Mass., N. Y., Pa., Va., W. Va., N. C., Ky., Mich., Ont.).
American Mountain Ash (Pa.).
Mountain Sumach (N. C.).
Wine-tree (N. C.).
Roundwood (Me.).
Life-of-Man (N. Y.).
Rowan-berry.
"Peruve" (Mountains, eastern Tenn.).
Rowan-tree.
Rowan-wood.
Service-berry.
Dog-berry.
Elder-leaved Sumach.
Elder-leaved Mountain Ash.
Missy-moosey.

Sorbus americana sitchensis (Roemer) Sudworth.[52] Western Mountain-ash.

RANGE.—Coast of Labrador to Maine; westward and northwestward to Washington and Alaska (Tongass National Forest); southward from Maine to northern New Hampshire, Vermont, and New York.

NOTE ON NOMENCLATURE.—Formerly designated as *Pyrus sambucifolia* of authors; not of Chamisso and Schlecht, as *Sorbus Americana*, var. *decora* Sargent, and as *Pyrus sitchensis* (Roemer) Piper, *Sorbus occidentalis* (S. Watson) Greene, and possibly *Sorbus scopulina* Greene applies to this plant.

NAME IN USE

Western Mountain-ash

Sorbus aucuparia Linnæus. European Mountain-ash.

RANGE.—Native of Europe and Asia. Long cultivated for ornament in eastern United States and Canada, in some parts of which it is reported to have become sparingly naturalized.

NAMES IN USE

Rowan Tree.
Mountain Ash.
Quick Beam.
European Mountain-ash.

PYRUS Linnæus. Pear

Pyrus communis Linnæus. Pear.

RANGE.—Native of Europe and Asia. Escaped from cultivation and established in a wild state more or less throughout eastern United States.

NAMES IN USE

Pear.
Common Pear (lit.).

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[50] The species included under *Sorbus* Linnæus were formerly designated under the genus *Pyrus* Linnæus.

[51] *Sorbus americana* (Pursh) Wenzig (= *Pyrus americana microcarpa* (Pursh) Torrey & Gray) is a shrub.

[52] This mountain ash, formerly believed to be *Pyrus sambucifolia* of Chamisso and Schlecht, has been found not to be the same plant, but to be distinct from that species and varietally related to *Sorbus americana* Marshall. Usually shrubby in the Northwest but sometimes 15 to 20 feet high and 2 to 3 inches in diameter (Tongass National Forest). Planted for ornament in Alaskan towns, it attains a height of 30 or 40 feet (fide C. T. Gardner, Forest Supervisor, Tongass National Forest).

HETEROMELES Roemer

Heteromeles arbutifolia (Poiret) Romer. Christmasberry.

RANGE.—Through California (coast region from Mendocino County) and islands to Lower California; inland to Sierra Nevada and to San Bernardino Mountains.

NAMES IN USE

California Holly (Calif.).
Christmasberry (Calif.).
Chamiso (Calif.).
Toyon (Calif.).
Tollon (Calif.).

AMELANCHIER Medicus

Amelanchier canadensis (Linnæus) Medicus).[53] Serviceberry.

RANGE.—From Quebec to Maine and west through southern Ontario, southern Ohio, Michigan, Indiana, Illinois, central Iowa and southeastern Nebraska; southward to western Florida, southern Alabama, south-central Mississippi, Louisiana (St. Landry Parish), into southwestern Arkansas and adjacent sections of Oklahoma.

NOTE ON NOMENCLATURE.—Formerly designated as *Amelanchier canadensis tomentula* Sargent.[54]

NAMES IN USE

June-berry (Mass., N. Y., Pa., Del., Ill.).
Shad Bush (Mass., R. I., N. Y., Conn., Pa., Del., S. C.).
Serviceberry (Del., Md., Ill., Ark., Fla.).
Service-tree (Pa., Del.).
May Cherry (Pa., N. C.).
Indian Cherry (Pa.).
Wild Indian Pear.
Currant Tree (Fla., Ala.).
Shad-berry (Fla.).
"Savice" (Tenn.).
Sarviceberry (Ky.).
Downy Serviceberry (lit.).
Shadblow.
Shad-flower.
Juice-plum.
Indian Pear.
Sugar-plum.

Amelanchier lævis Wiegand. Serviceberry.

RANGE.—From Newfoundland through Quebec and Ontario to Wisconsin, and southward through the New England States, New York, Pennsylvania, and in the eastern mountains to northern Georgia.

NOTE ON NOMENCLATURE.—Formerly included in part by some authors as *Amelanchier canadensis*, but not of Linnæus.

NAMES IN USE

Serviceberry.
Allegheny Serviceberry.

Amelanchier florida Lindley.[55] Western Serviceberry.

RANGE.—From Alaska (Yukon River, vicinity of Dawson and Wrangell) to California (northern boundary); eastward to the Rocky Mountains and to Colorado. Range as yet not fully known.

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[53] *Amelanchier alabamensis* Britton (Britton and Shafer, North Am. Trees, 439, 1908), found at Auburn, Lee County, Ala., appears to be very near the above species and possibly later study may show it to be the same.

[54] *Amelanchier canadensis spicata* (LaMarck) Sargent, which occurs from New Brunswick to New York and Minnesota and south in the eastern mountains to North Carolina, in its extreme forms appears to be specifically distinct from *Amelanchier canadensis* (Linnæus) Medicus, but intermediate forms of leaves appear to connect the typical orbicular leaf of the variety with foliage of the latter species. Britton and Shafer (North Am. Trees, 439, 1908) consider this plant a species and have taken up for it *Amelanchier sanguinea* (Pursh) Lindley.

Amelanchier canadensis obovalis Michaux, is here treated as a form of *Amelanchier canadensis* (Linnæus, Medicus. It occurs from Nova Scotia and New Brunswick to Ontario, and northwestward to the Mackenzie River (latitude 65° north); south, in the Allegheny Mountains, to Virginia, and west to Minnesota and Missouri; eastern Louisiana; North Carolina (Coast Region) to Alabama (Mobile Bay).

[55] Britton and Shafer (North Am. Trees, 441, 1908) took up *Amelanchier florida* Lindley as applicable to the northwestern form of Serviceberry usually included under *Amelanchier alnifolia* Nuttall Piper and Beattie (Flor. Northw. Coast, 200, 1915) also took up this name as the only one properly applicable in the region covered by their work.

NOTE ON NOMENCLATURE.—Formerly included under *Amelanchier alnifolia* Nuttall, which, as now understood, is a shrub.

NAMES IN USE

Pigeon Berry (So. Oreg.).
Serviceberry (Colo., Calif.).
Western Serviceberry.
Rocky Mountain Service Tree (lit.).
Sarvice (Colo., Utah., Wyo.).
Sarviceberry (Colo., Idaho).
Saskatoon.

CRATÆGUS Linnæus [56]

GROUP 1: OXYCANTHÆ Loudon

Cratægus oxycantha Linnæus. **English Hawthorn.**

RANGE.—Native of Europe. Widely cultivated and naturalized in a few localities in the eastern United States.

NAMES IN USE

English Hawthorn.
Quick.
Quick-set-Thorn.

GROUP 2: CRUS-GALLI Loudon

Cratægus crus-galli Linnæus. **Cockspur Thorn.**

RANGE.—From the St. Lawrence River (near Montreal) southward to Delaware and in the Appalachian foothills to North Carolina; westward through western New York and Pennsylvania to southern Michigan.

NAMES IN USE

Cockspur Thorn (Vt., N. H., R. I., N. Y., N. J., Pa., Del., W. Va., N. C., Ont.).
Red Haw (Mich.).
Newcastle Thorn (Del.).
Thorn Apple (N. Y.).
Thorn Bush (Pa.).
Thorn (Pa.).
Pin Thorn.
Thorn Plum (Me.).
Cockspur Hawthorn (Pa.).
Hawthorn (Pa.).
Haw.

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[56] In 1898, when the first edition of the Check List was issued, the number of different native and naturalized species of *Cratægus* then recognized did not exceed 25. At the present time there are probably at least 197 known arborescent species, together with approximately 100 shrubby hawthorns. Eastern United States and adjacent sections of Canada have yielded the great majority of these species.

With the exception of the genus *Eucalyptus*, doubtless *Cratægus* is the most difficult group of woody plants. The distinctions relied upon to separate many of the species include the color and number of stamens, form and color of the fruit, the number and markings of its seeds, etc., all of which require carefully collected sets of specimens, taken from the same individual plant, from the early flowering to fruiting stages. Most of these characteristics are quite beyond the lay student of trees, while they are exceedingly difficult even for technically trained observers. Perhaps less than 25 of our native hawthorns could be accurately distinguished by the layman. Later studies may show also that a good many of the hawthorns now regarded as species are actually of hybrid origin. Years of study and painstaking investigation in growing plants from seed will be required before this most perplexing group can be fully understood.

The first edition of Professor Sargent's Manual of the Trees of North America (1905) contains descriptions of 132 species of *Cratægus*, and the new edition of his Manual contains 153 arborescent species. N. L. Britton and J. A. Shafer have described and figured 51 species of *Cratægus* in their work on North American Trees (1908). These are the only two works attempting to describe all of the known species of *Cratægus* growing in North America.

Of the regional floras which collectively deal with our hawthorns, Asa Gray's New Manual of Botany (1908) gives 65 species, only 5 being noted as trees; while J. K. Small in the last edition of his Flora of Southeastern United States (1913) described 184 species of this genus, of which 142 are ranked as trees. P. A. Rydberg's Flora of the Rocky Mountains and Adjacent Plains (1917) contains 8 species of *Cratægus*, all of which are trees. In his Silva of California (1910) W. L. Jepson admits a shrubby species for California, and Charles V. Piper and R. Kent Beattie in their Flora of the Northwest Coast (1915) record one species as a shrub, which elsewhere, however, is a tree. The total number of tree hawthorns recorded in these regional floras is 259, of which 155 are ranked as trees.

Necessarily the ranges given for many species have not been fully determined, the information now available often being rather fragmentary. Much further careful study is necessary before the ranges of species now known are fully understood.

The species of this genus are variously referred to as hawthorns, thorns, and thornapples.

Cratægus crus-galli pyracanthifolia Aiton.

RANGE.—Eastern Pennsylvania and northern Delaware.

Cratægus crus-galli oblongata Sargent.

RANGE.—Delaware (near Wilmington); Pennsylvania (Durham, Bucks County).

Cratægus crus-galli capillata Sargent.

RANGE.—Delaware (near Wilmington).

Cratægus canbyi Sargent.

RANGE.—Delaware (Wilmington) to Maryland (Chesapeake Bay) and to eastern Pennsylvania.

Cratægus peoriensis Sargent.

RANGE.—Illinois (Short and Peoria Counties).

Cratægus fecunda Sargent.

RANGE.—Illinois (Mississippi River bottoms in St. Claire County); Missouri (vicinity of Allenton, St. Louis County).

NAME IN USE

Missouri Hawthorn (lit.)

Cratægus regalis Beadle.

RANGE.—Northwestern Georgia (abundant about Rome) and northern Alabama.

Cratægus arduennæ Sargent.

RANGE.—Western New York (Erie County); eastern Pennsylvania (Berks County); southern Ontario, Ohio, southeastern Michigan, northeastern Indiana (Allen County), northern Illinois (vicinity of Chicago to Joliet), and Missouri (northern and central sections).

Cratægus algens Beadle.

RANGE.—Western North Carolina (abundant in Buncombe County) to northern Georgia and Alabama (Dallas County), to eastern Tennessee.

Cratægus erecta Sargent.

RANGE.—Illinois (Mississippi River bottoms opposite St. Louis); Missouri (St. Louis and Cole Counties); western and southwestern Arkansas.

Cratægus acutifolia Sargent.

RANGE.—Missouri (Mississippi River bluffs in South St. Louis); southern Illinois (Richland and St. Clair Counties), west Tennessee to Arkansas.

Cratægus bushii Sargent.

RANGE.—Southern Arkansas (near Fulton on the Red River) and southeastern Oklahoma (Rich Mountain); Louisiana (Natchitoches, Calcasieu, and Winfield Parishes); eastern Texas (Harris County).

Cratægus sublobulata Sargent.

RANGE.—Texas (vicinity of San Augustine, San Augustine County).

Cratægus warneri Sargent.

RANGE.—Texas (Huntsville, Walker County; Larissa, Cherokee County; Palestine, Anderson County). Said to be very rare as now known, arborescent only at Palestine.

Cratægus arborea Beadle.

RANGE.—Alabama (near Montgomery).

Craqtægus engelmannii Sargent.

RANGE.—Central and southern Missouri (abundant in the vicinity of Allenton and Pacific); Arkansas (Carroll and Van Buren Counties); Illinois and Kentucky.

Cratægus denaria Beadle.

RANGE.—Eastern Mississippi (Abundant in the vicinity of Columbus).

Cratægus palmeri Sargent.

RANGE.—Southwestern Missouri (abundant in the vicinity of Carthage, Webb City, and Noel), to southeastern Kansas and northwestern Arkansas.

Cratægus signata Beadle.

RANGE.—Southern Alabama (coast plain pine lands).

Cratægus edita Sargent.

RANGE.—Eastern Texas (valley of the Sabine River) to western Louisiana (Natchitoches Parish).

Cratægus tersa Beadle.

RANGE.—Western Louisiana (vicinity of Opelousas, St. Landry Parish).

Cratægus berberifolia Torrey and Gray.

RANGE.—Western Louisiana (occurs at a point several miles west of Opelousas, St. Landry Parish).

Cratægus edura Beadle.

RANGE.—Western Louisiana (vicinity of Opelousas, St. Landry Parish).

Cratægus crocina Beadle.

RANGE.—Western Louisiana (vicinity of Opeloauss, St. Landry Parish).;

Cratægus fera Beadle.

RANGE.—Western Louisiana (vicinity of Opelousas, St. Landry Parish; Natchitoches Parish).

Cratægus subpilosa Sargent.

RANGE.—Arkansas (vicinity of Eureka Springs, Carroll County).

Cratægus swanensis Sargent.

RANGE.—The single tree, now known to be growing in the Arnold Arboretum, near Boston, was raised from seed of a wild tree discovered in 1906 by B. F. Bush at Swan, Christian County, Mo.

Cratægus mohrii Beadle.

RANGE.—Western Georgia to central Alabama and Mississippi; northward to central Tennessee.

Cratægus uniqua Sargent.

RANGE.—Eastern Texas (vicinity of Marshall, Harrison County, and Livingston, Polk County), to southwestern Arkansas.

Cratægus montegava Sargent.

RANGE.—Western Texas (Kendall, Comal, Bandera, Edwards, Brown, and Jeff Davis Counties).

Cratægus cocksii Sargent. **Cocks Thorn.**

RANGE.—Northern Louisiana (Winn Parish).

NAME IN USE

Cocks Thorn

Cratægus cherokeensis Sargent.

RANGE.—Texas (Cherokee County).

Cratægus phaneroneura Sargent.

RANGE.—Missouri (Pike County).

Cratægus lawrencensis Sargent.

RANGE.—Missouri (Lawrence County).

Cratægus limnophila Sargent.

RANGE.—Florida (vicinity of St. Marks, Wakulla County).

Cratægus intermixta Sargent.

RANGE.—Missouri (Riverside Park, Hannibal, Marion County).

Cratægus araioclada Sargent.

RANGE.—Louisiana (vicinity of Natchitoches, Natchitoches Parish).

Cratægus ohioensis Sargent.

RANGE.—Ohio (vicinity of Columbus, Franklin County).

Cratægus palliata Sargent.

RANGE.—Southwestern Arkansas (Hempstead and Miller Counties).

Cratægus triumphalis Sargent.

RANGE.—Southwestern Arkansas (Hempstead and Miller Counties).

GROUP 3: PUNCTATÆ Loudon

Cratægus punctata Jacquin. **Dotted Thorn.**

RANGE.—From Quebec (Chateaygay River near Montreal), to Ontario (Detroit River); southward through western New England to Delaware, and in the Appalachian Mountains to northern Georgia; westward through New York and Ohio to southern Michigan and Illinois, southern Wisconsin, southeastern Minnesota; central Iowa.

NAMES IN USE

Dotted Thorn. Dotted-fruited Thorn.
Dotted Hawthorn (lit.).

Cratægus punctata canescens Britton.

RANGE.—New York (vicinity of Albany); Pennsylvania (Bucks County).

Cratægus punctata microphylla Sargent.

RANGE.—Pennsylvania (Linesville, Crawford County).

VARIETY DISTINGUISHED IN CULTIVATION

Cratægus punctata xanthocarpa (Medicus) Lavallée. **Yellowberry Thorn.**

Cratægus pausiaca Ashe.

RANGE.—New York (Ontario County); eastern Pennsylvania (Bucks, Berks, and Delaware Counties).

Cratægus collina Chapman.

RANGE.—Southwestern Virginia (foothills of southern Appalachian Mountains) to central Georgia; central Tennessee, and northeastern Mississippi; central Alabama.

Cratægus amnicola Beadle.

RANGE.—Southeastern Tennessee, northwestern Georgia, and northeastern Alabama.

Cratægus fastosa Sargent.

RANGE.—Arkansas (valley of the Red River in the vicinity of Fulton; Hempstead County).

Cratægus verruculosa Sargent.

RANGE.—Missouri (vicinity of Springfield); Arkansas (southwestern).

Cratægus silvestris Sargent.

RANGE.—Ontario (vicinity of London).

Cratægus sordida Sargent.

RANGE.—Southern Missouri (Ripley, Shannon and Carter Counties); Southwestern Arkansas (vicinity of Fulton, Hempstead County).

Cratægus brazoria Sargent.

RANGE.—Southeastern Texas (Brazos River in the vicinity of Brazoria and Columbia).

Cratægus dallasiana Sargent.

RANGE.—Texas (bottom-lands of Trinity River, Dallas County).

Cratægus lettermanii Sargent.

RANGE.—Missouri (vicinity of Allenton).

Cratægus pratensis Sargent. **Prairie Thorn.**

RANGE.—Illinois (Stark, Richland, and Peoria Counties).

NAME IN USE

Prairie Thorn

GROUP 4: AESTIVALES Sargent

Cratægus aestivalis (Walter) Sargent. **May Haw.**

RANGE.—Georgia (Effingham and Lowndes Counties); South Carolina (Hampton and Aiken Counties); southeastern North Carolina (Craven County).
NOTE ON NOMENCLATURE.—Not *Cratægus æstivalis* Torrey and Gray.

NAMES IN USE

May Haw.
Apple Haw.
Summer Haw.

Cratægus æstivalis maloides Sargent.

RANGE.—Florida (Haw Creek, 6 miles east of Seville, Volusia County).

Cratægus rufula Sargent.

RANGE.—North Carolina, Georgia, Florida, and Alabama.
NOTE ON NOMENCLATURE.—Formerly designated as *Cratægus æstivalis* Torrey and Gray (in part), but not *Mespilus æstivalis* Walter.

Cratægus opaca Hooker.

RANGE.—Alabama (Mobile and Dallas Counties); Mississippi (Forrest and Lauderdale Counties); Louisiana; eastern Texas (to the Trinity River).

GROUP 5: VIRIDES Beadle

Cratægus viridis Linnæus. **Green Haw.**

RANGE.—From southeastern Virginia (Isle of Wight County) to western Florida; westward in the Gulf States to Texas (San Antonio River); northward to Oklahoma, Arkansas, southeastern Kansas, Missouri, southern Illinois (to Pike County); southeastern Tennessee.

NAMES IN USE

Tree Haw (Ala., Miss., La., S. C.).
Red Haw (Ala., Miss., La.).
Haw (Ala.).
Senellier (La.).
Tree Thorn (Fla.).
Southern Thorn.
Green Haw.

Cratægus ovata Sargent.

RANGE.—Missouri (St. Louis and Jasper Counties).

Cratægus glabriuscula Sargent.

RANGE.—Eastern Texas (Trinity River bottoms in the vicinity of Dallas).

Cratægus vulsa Beadle.

RANGE.—Northwestern Georgia and adjacent sections of Alabama.

Cratægus blanda Sargent.

RANGE.—Arkansas (Red River Valley in the vicinity of Fulton, Hempstead County); Texas, Louisiana, and Alabama.

Cratægus nitida Sargent.

RANGE.—Illinois (Mississippi River bottoms opposite St. Louis; also in Richland County); Missouri (Hannibal) and Arkansas (Phillips County).

NAME IN USE

Glossy Hawthorn (lit.)

Cratægus mitis Sargent.

RANGE.—Illinois (Mississippi River bottoms in the vicinity of Kahokia, several miles south of East St. Louis, and Richland County).

Cratægus atrorubens Ashe.

RANGE.—Illinois (Mississippi River bottoms, East St. Louis); Missouri (St. Louis County).

Cratægus ingens Beadle.

RANGE.—Southeastern Tennessee and northwestern Georgia.

Cratægus penita Beadle.

RANGE.—Southern Tennessee.

Cratægus micrantha Sargent.

RANGE.—Arkansas (Red River Valley in the vicinity of Fulton, Hempstead County).

Cratægus velutina Sargent.

RANGE.—Arkansas (vicinity of Fulton, Hempstead County); eastern Texas (Brazoria County); eastern Louisiana.

Cratægus amicalis Sargent.

RANGE.—Southwestern Arkansas (Hempstead and Miller Counties; type locality, Fulton, Hempstead County).

Cratægus enucleata Sargent.

RANGE.—Southwestern Arkansas (Hempstead and Miller Counties; type locality, Fulton, Hempstead County).

Cratægus arborescens Ellwanger.

RANGE.—Georgia (near Dorchester, Liberty County; neighborhood of Savannah; Ogeeche River at Fort Argyle, Chatham County; near Augusta, Richmond County).

Cratægus poliophylla Sargent.

RANGE.—Texas (Brazoria and Fort Bend Counties).

Cratægus stenosepala Sargent.

RANGE.—Texas (vicinity of Duke, Fort Bend County).

Cratægus abbreviata Sargent.

RANGE.—Texas (Brazos River in vicinity of Brazoria, Brazos County).

Cratægus antiplasta Sargent.

RANGE.—Texas (vicinity of Duke, Fort Bend County).

Cratægus sutherlandensis Sargent.

RANGE.—Texas (Cibalo River in vicinity of Sutherland Springs, Wilson County).

Cratægus sutherlandensis spinescens Sargent.

RANGE.—Texas (vicinity of Sutherland Springs, Wilson County).

GROUP 6: PRUINOSÆ Sargent

Cratægus pruinosa (Wendland) K. Koch.

RANGE.—Southwestern Vermont to southern Ontario, Ohio, Indiana, and Illinois; south in the East through eastern Pennsylvania to Delaware.

NAME IN USE

Frosted Hawthorn (lit.)

Cratægus georgiana Sargent.

RANGE.—Georgia (river bottoms in the vicinity of Rome).

Cratægus callicarpa Sargent.

RANGE.—Missouri (vicinity of Shrewsbury, St. Louis County).

Cratægus disjuncta Sargent.

RANGE.—Missouri (vicinity of Monteer, Shannon County; Carl Junction, Jasper County); Arkansas (Cleburne and Washington Counties).

Cratægus mariettensis Sargent.

RANGE.—Ohio (vicinity of Marietta, Washington County).

GROUP 7: SILVICOLÆ Sargent

Cratægus drymophila Sargent.

RANGE.—Central and northwestern Georgia; northern Alabama; central Mississippi; eastern Louisiana.[57]

NOTE ON NOMENCLATURE.—Formerly designated as *Cratægus silvicola* Beadle, not of Grandoger (1871).

[57] Britton and Shafer (op. cit., 461) extend this range to western New England and to southern Michigan.

Cratægus diffusa Sargent.

RANGE.—New Hampshire (Cheshire County); Vermont (Windham and Chittenden Counties); eastern, central, and western New York.

NOTE ON NOMENCLATURE.—Includes *Crataegus Beckwithae* Sargent and *Cratægus Robbinsiana* Sargent.

Cratægus luxuriosa Sargent.

RANGE.—Pennsylvania (Armstrong and Crawford Counties).

GROUP 8: TENUIFOLIÆ Sargent

Cratægus apiomorpha Sargent.

RANGE.—Northeastern Illinois (abundant in the vicinity of Chicago).

Cratægus paucispina Sargent.

RANGE.—Northeastern Illinois (Maywood, vicinity of Chicago).

Cratægus pentandra Sargent.

RANGE.—Southern and western Vermont; southern Connecticut (New London County); eastern and central New York.[58]

Cratægus lucorum Sargent.

RANGE.—Illinois (vicinity of Barrington, Cook County); New York (vicinity of Ithaca).

Cratægus depilis Sargent.

RANGE.—Northeastern Illinois (Lake, Cook, and Will Counties).

Cratægus basilica Beadle.

RANGE.—Western North Carolina (commonly at elevations of from 2,000 to 3,000 above sea level).

Cratægus lacera Sargent.

RANGE.—Arkansas (Red River Valley near Fulton, Hempstead County).

GROUP 9: MOLLES Sargent

Cratægus mollis (Torrey and Gray) Scheele. **Red Haw.**

RANGE.—Northern Ohio and southwestern Ontario to eastern South Dakota, eastern Nebraska and Kansas; southern Illinois (Richland County); Tennessee (Davidson County).[59]

NAMES IN USE

Red Haw. Downy Hawthorn (lit.).
Thorn Apple.

Cratægus sera Sargent.

RANGE.—Southwestern Ontario (Walpole Island); Michigan (Belle Isle—in the Detroit River, Kent County); northeastern Illinois (Cook, Lake, Will, and Dupage Counties); Wisconsin (vicinity of Milwaukee).

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[58] Britton and Shafer (North Am. Trees, 467, 1908) extends this range to Virginia (foothills of the Appalachian Mountains).

[59] Britton and Shafer (op. cit., 470) extend this range to Quebec, and thence through western New England and southward to Tennessee. The recent discovery of this species in southern Illinois by Robert Ridgway indicates also that it has a more southern range than was previously suspected.

Cratægus arkansana Sargent.

RANGE.—Arkansas (White River bottom-lands in the vicinity of Newport). Grows well in cultivation as far north as eastern Massachusetts.

NAME IN USE

Arkansas Hawthorn (lit.)

Cratægus gravida Beadle.

RANGE.—Tennessee (vicinity of Nashville).

Cratægus treleasei Sargent.

RANGE.—Missouri (Doe Run to Bismarck, St. Francois County).

Cratægus meridionalis Sargent.

RANGE.—Central Alabama (Hale County) to Mississippi (Oktibbeha and Noxubee Counties).

Cratægus noelensis Sargent.

RANGE.—Missouri (McDonald and Stone Counties; Arkansas (Benton County).

Cratægus canadensis Sargent.

RANGE.—Quebec (near the St. Lawrence River at Chateaugay, Caughnawaga, and La Tortue).

Cratægus berlandieri Sargent.

RANGE.—Texas (Brazos River bottoms at Brazoria and Columbia).

Cratægus corusca Sargent.

RANGE.—Illinois (Lake Zurich, Lake County).

Cratægus kelloggii Sargent.

RANGE.—Missouri (Despères River, St. Louis County).

Cratægus texana Buckley.

RANGE.—Central and western Texas.

Cratægus quercina Ashe.

RANGE.—Eastern Texas (Brazos River bottom, vicinity of Columbia).

Cratægus dispersa Ashe.

RANGE.—Southern Missouri (bottomlands, Shannon County).

Cratægus brachyphylla Sargent.

RANGE.—Arkansas (woods approximately 5 miles west of Fulton, Hempstead County).

Cratægus lanuginosa Sargent.

RANGE.—Southwestern Missouri to Arkansas (Clark County).

Cratægus induta Sargent. **Turkey Apple.**

RANGE.—Arkansas (Red River Valley in the vicinity of Fulton, Hempstead County to Miller and Nevada Counties).

NAME IN USE

Turkey Apple (Ark.)

Cratægus arnoldiana Sargent.

RANGE.—Massachusetts (valley of the Mystic River at Medford, and on banks in the Arnold Arboretum); Connecticut (New London County).

NAME IN USE

Arnold Hawthorn (lit.)

Cratægus champlainensis Sargent. [60]

RANGE.—St. Lawrence River Valley (vicinity of Montreal) and southward through the Champlain Valley to eastern New York and westward in the State to southern Ontario (vicinity of Toronto).

Cratægus pennsylvanica Ashe.

RANGE.—Southwestern Pennsylvania (vicinity of Pittsburgh).

Cratægus submollis Sargent.

RANGE.—Quebec (Hull County); St. Lawrence River Valley from Isle of Orleans west; Maine (Penobscot River and Gerrish Island) to eastern Massachusetts (coast).

NAME IN USE

Quebec Hawthorn (lit.)

Cratægus transmissippiensis Sargent.

RANGE.—Missouri (vicinity of Noel, McDonald County; near Galena, Stone County); Arkansas (Marion County; near Cotter, Baxter County).

Cratægus anomala Sargent.

RANGE.—Quebec (vicinity of the St. Lawrence River, in the Caughnawaga Indian Reservation directly opposite Lachine); Vermont (Rutland County); New York (Essex and Washington Counties).

Cratægus robesoniana Sargent.

RANGE.—Western Massachusetts through central and western New York to Ontario (vicinity of Toronto).

NOTE ON NOMENCLATURE.—Includes *Cratægus spissiflora* Sargent.

Cratægus ellwangeriana Sargent. **Ellwanger Thorn.**

RANGE.—New York (abundant in vicinity of Rochester) to western Pennsylvania, southern Ontario, and Michigan.

NAME IN USE

Ellwanger Thorn. Ellwanger Hawthorne (lit.).

[60] Britton and Shafer (op. cit., 471) consider this and the next species forms only of *Cratægus mollis* (Torrey and Gray) Scheele.

Cratægus limaria Sargent.

RANGE.—Arkansas (Red River Valley at Fulton, Hempstead County); western Texas (Victoria, Wilson, and Bexar Counties); Mexico.
NOTE ON NOMENCLATURE.—Includes *Cratægus mackensenii* Sargent.

Cratægus viburnifolia Sargent.

RANGE.—Texas (valley of the Brazos River between Columbia and Brazoria, Brazoria County; Wharton County).

Cratægus invisa Sargent.

RANGE.—Arkansas (Red River Valley at Fulton, Hempstead County; Texarkana, Miller County); eastern Texas (vicinity of San Augustine); Oklahoma.

Cratægus greggii Eggleston.

RANGE.—Texas (Guadalupe River below Kerrville, Kerr County); Mexico (vicinity of Saltillo, Coahuila).

GROUP 10: COCCINEÆ Sargent

Cratægus neo-londinensis Sargent.[61]

RANGE.—Connecticut (Fisher's Island Sound, Mumford's Point, Groton, formerly part of New London, and Lyme).

Cratægus hillii Sargent.

RANGE.—Northeastern Illinois (vicinity of Chicago in River Forest, Thatcher's Park, and Glendon Park).

Crataegus assurgens. Sargent.

RANGE.—Northeastern Illinois (vicinity of Chicago in Thatcher's Park; Highland Park, Lake County); Wisconsin (Fox Point).

Cratægus pringlei Sargent.

RANGE.—Southern New Hampshire, through southern Vermont to western Massachusetts, eastern and central and western New York and southern Ontario, and northeastern Ohio, through southern Michigan to northeastern Illinois.

Cratægus lobulata Sargent.

RANGE.—Vermont (vicinity of Burlington) and southward through the Champlain Valley (to Essex County); western Massachusetts to southern Connecticut (Fairfield County).

Cratægus pedicellata Sargent.

RANGE.—Central and western New York to western Pennsylvania and southern Ontario.

Cratægus pedicellata gloriosa Sargent.

RANGE.—Western New York (vicinity of Rochester).
NOTE ON NOMENCLATURE.—Formerly designated as *Cratægus gloriosa* Sargent.

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[61] Britton and Shafer (op. cit., 469) consider this and the next species, and also *Cratægus lobulata* Sargent, *Cratægus polita* Sargent, and *Cratægus exclusa* Sargent, variable forms only of *Cratægus pringlei* Sargent. The characteristics used for separating these species, however, seem to the writer to be acceptable and consistent within the genus *Cratægus*.

Cratægus holmesiana Ashe.[62]

RANGE.—Quebec (vicinity of Montreal) and southern Ontario to southern Maine (coast), central and western Massachusetts, western New York, Rhode Island, and eastern Pennsylvania.

Cratægus holmesiana villipes (Ashe) Sargent.

RANGE.—Pennsylvania (Bucks County).

Cratægus holmesiana tardipes Sargent.

RANGE.—Quebec, Ontario, and central and western New York.
NOTE ON NOMENCLATURE.—Formerly designated as *Cratægus tardipes* Sargent.

Cratægus acclivis Sargent.

RANGE.—New York (Genesee River at Rochester and Niagara River at Niagara Falls; Erie County).

Cratægus delecta Sargent.

RANGE.—Northeastern Illinois (Wauconda, Fort Sheridan, Deerfield, Lake Forest, and Lockport).

Cratægus sertata Sargent.

RANGE.—Northeastern Illinois (Will, Dupage, Cook, and Lake Counties).

Cratægus eamesii Sargent.

RANGE.—Connecticut (Stratford and Ansonia).

GROUP 11: DILATATÆ Sargent

Cratægus dilatata Sargent.[63]

RANGE.—Eastern Massachusetts (Ipswich to Somerset); Rhode Island, Mount Hope Bay at Tiverton); western Vermont; New York (vicinity of Albany); Quebec (vicinity of Montreal).

Cratægus suborbiculata Sargent.

RANGE.—Quebec (Caughnawaga Indian Reservation,[64] on ridges near the south border of St. Lawrence River opposite Lachine and on the Island of Montreal); Ontario (vicinity of Cornwall).

Cratægus hudsonica Sargent.

RANGE.—New York (Hudson River Valley in the vicinity of Albany).

Cratægus coccinioides Ashe.[65]

RANGE.—Missouri (vicinity fo St. Louis); eastern Kansas; northwest Arkansas.

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[62] Britton and Shafer (op. cit., 466) have replaced this name with *Cratægus tenuifolia* Britton, the judgment of these authors being that *Cratægus holmesiana* Ashe is antedated by *Cratægus holmesii* Lesquereux. However, we are maintaining as tenable *Acer saccharum* Marshall and *Acer saccharinum* Linnæus.

[63] Britton and Shafer (op. cit., 468) consider this species an eastern form only of *Cratægus coccinioides* Ashe. In the writer's opinion, however, it seems advisable to maintain them as separate species.

[64] Fide Britton and Shafer (op. cit., 454).

[65] Britton and Shafer (op. cit., 467) extend the range of this species to the vicinity of Montreal, Quebec. It seems probable that this extension of range should apply to *Cratægus dilatata* Sargent.

GROUP 12: ROTUNDIFOLIÆ Eggleston

Cratægus coccinea Linnæus. **Scarlet Haw.**

RANGE.—Newfoundland to Connecticut (commonly in the coast region) and in the St. Lawrence River Valley to western Quebec. As this species is now understood, its range is confined to northeastern United States and adjacent Canadian territory, whereas formerly it was made to include practically the eastern half of the United States.

NAMES IN USE

Scarlet Haw.
Black-thorn.
Crimson Haw.
Scarlet-fruited Thorn.
Albespine.

Cratægus rotundifolia Moench.

RANGE.—Nova Scotia, southern Quebec, and Ontario to Manitoba and Saskatchewan; southward in New England and New York (eastern and northern), Michigan and northern Indiana; Pennsylvania (Lackawanna, Bucks, Northampton, and Blair Counties).

NOTE ON NOMENCLATURE.—Formerly designated as *Cratægus coccinea* var. *rotundifolia* (Moench) Sargent. [66]

NAME IN USE

Roundleaf Hawthorn (lit.)

Crataegus rotundifolia pubera Sargent.

RANGE.—Newfoundland to Lake St. John, Quebec, northern Ontario, Winnepeg and Manitoba; southward in eastern Canada, New England to southern Connecticut, northern and western New York (Essex County), northern peninsula of Michigan, and northeastern Wisconsin, central Minnesota (Sterns County).

Cratægus jonesæ Sargent.

RANGE.—Southeastern Maine (Isleboro and Belfast Bay to Mount Desert Island).

Cratægus margaretta Ashe.

RANGE.—Ontario to southern Michigan, Illinois, Indiana, Ohio, and Iowa, Missouri (Webster—vicinity of St. Louis to Springfield); middle Tennessee.

Cratægus margaretta brownii (Britton) Sargent.

RANGE.—Indiana (Lake Everett, Allen County); Virginia (Buchanan, Botetourt County).

NOTE ON NOMENCLATURE.—Formerly designated as *Cratægus brownii* Britton.

Cratægus mansfieldensis Sargent.

RANGE.—Ohio (vicinity of Mansfield, Richmond County).

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[66] *Cratægus coccinea rotundifolia* (Moench) Sargent formerly was held to be a shrub occurring from New England to eastern Pennsylvania (C. S. Sargent in Bot. Gaz., XXXI, 14, 1901).

GROUP 13: INTRICATÆ Sargent

Cratægus boyntonii Beadle.

RANGE.—Southwestern Virginia to northern Georgia and Alabama, southeastern Kentucky, and eastern Tennessee.[67]

NAME IN USE

Boynton Hawthorn (lit.)

Cratægus buckleyi Beadle.

RANGE.—Southwestern Virginia through western North Carolina to eastern Tennessee.

NAME IN USE

Buckley Hawthorn (lit.)

Cratægus venusta Beadle.

RANGE.—Alabama (slopes of Red Mountain—southern section of Birmingham).

Cratægus sargentii Beadle.

RANGE.—Northwestern Georgia, southeastern Tennessee, and northeastern Alabama.

GROUP 14: PULCHERRIMÆ Sargent

Cratægus opima Beadle.

RANGE.—Alabama (vicinity of Greenville); western Florida (vicinity of Tallahassee).

Cratægus robur Beadle.

RANGE.—Northwestern Florida (abundant in the vicinity of Tallahassee).

GROUP 15: BRACTEATÆ Sargent

Cratægus harbisonii Beadle.

RANGE.—Tennessee (hills in the vicinity of Nashville).

Cratægus ashei Beadle.

RANGE.—Alabama (vicinity of Montgomery and Gallion).

GROUP 16: FLAVÆ Loudon

Cratægus flava Aiton.

RANGE.—Georgia (vicinity of Augusta, particularly west of this city); Florida River Junction).[68]

NAME IN USE

Yellow Haw

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[67] Britton and Shafer (op. cit., 459) extend this range to western New England and westward to western New York and southern Missouri.

[68] Fide C. S. Sargent, Silva N. A., XIII, 156, 1902. As formerly understood the range of this species extended from southern Virginia to Florida and westward through Mississippi, some authors giving it as far west as Texas.

Cratægus consanguinea Beadle.

RANGE.—Western Florida (vicinity of Tallahassee to the Apalachicola River).

Cratægus tristis Beadle.

RANGE.—Northwestern Georgia (abundant in the vicinity of Rome).

Cratægus visenda Beadle.

RANGE.—Florida (vicinity of Bristol).

Cratægus ignava Beadle.

RANGE.—Northeastern Alabama (abundant on Lookout Mountain and at Collinsville and Gadsden).

Cratægus floridana Sargent.

RANGE.—Northeastern Florida (abundant in the vicinity of Jacksonville).

Cratægus lacrimata Small.

RANGE.—Western Florida (Pensacola to De Funiak Springs).

Cratægus ravenelii Sargent.

RANGE.—South Carolina (vicinity of Aiken); Georgia (Summerville—near Augusta).

Cratægus senta Beadle.

RANGE.—North Carolina (vicinity of Asheville).

Cratægus panda Beadle.

RANGE.—Florida (vicinity of Tallahassee).

Cratægus integra Beadle.

RANGE.—Central Florida (abundant in the vicinity of Eustis and Orlando).

Cratægus recurva Beadle.

RANGE.—Florida (Ocala).

Cratægus annosa Beadle.

RANGE.—Eastern-central Alabama (abundant in the vicinity of Gerard and Phoenix).

Cratægus dispar Beadle.

RANGE.—South Carolina (hills about Aiken and Trenton); Georgia (Summerville).

Cratægus aprica Beadle.

RANGE.—Southwestern Virginia and western North Carolina to eastern Tennessee, northern Georgia, and Alabama.

GROUP 17: UNIFLORÆ Beadle

Cratægus choriophylla Sargent.

RANGE.—Florida (Lake City, Columbia County).

GROUP 18: MICROCARPÆ Loudon

Cratægus apiifolia (Marshall) Michaux. **Parsley Haw.**

RANGE.—Coast region from southern Virginia to central Florida, and west in the Gulf region to southern Arkansas, eastern Oklahoma, southern Missouri, and coast region to eastern Texas (to Colorado River).

NAMES IN USE

Parsley Haw (N. C. Ala., Fla., Miss., La.).
Red Haw (Miss.).
Parsley-leaved Haw (S. C.).

× **Cratægus notha** Sargent. **Hybrid.**

RANGE.—Southwestern Arkansas (vicinity of McNab, Hempstead County).
NOTE ON NOMENCLATURE.—Supposed to be a hybrid between *Cratægus apiifolia* (Marshall) Michaux and *Cratægus brachyphylla* Sargent.

Cratægus phænopyrum (Linnæus fils.) Medicus.[69] **Washington Thorn.**

RANGE.—From Western North Carolina to Central Tennessee, Kentucky, and southern Illinois (lower Wabash River) and southwestern Missouri (as far east as Shannon County). Cultivated as an ornamental both within and outside of its natural range, and now often naturalized.

NAMES IN USE

Washington Thorn (N. J., Pa., Del., N. C., S. C., Ill.).
Virginia Thorn (Del.).
Heart-leaved Thorn (Tenn.).
Thorn (Ky.).
Red Haw.
Washington Hawthorn (lit.).

Cratægus youngii Sargent.

RANGE.—North Carolina (vicinity of Greensboro, Guilford County; Raleigh, Wake County); South Carolina (Wateree River, near Camden, Kershaw County.)

Cratægus spathulata Michaux.

RANGE.—Coast region from North Carolina to northern Florida and west to Arkansas, southeastern Oklahoma, Missouri, and Texas (Guadalupe River).

NAMES IN USE

Spatulate-leafed Thorn (lit.).
Small-fruited Thorn (lit.).

GROUP 19: BRACHYACANTHÆ Sargent

Cratægus brachyacantha Sargent and Engelmann.

RANGE.—Southwestern Arkansas (Texarkana) and western Louisiana to eastern Texas (Trinity River).

[69] Formerly designated as *Cratægus cordata* (Miller) Aiton, which is not, as supposed by some authors, the same as *Mespilus cordata* Miller. The next oldest name for the Washington Thorn is *Mespilus Phænopyrum* Linnæus fils, on which the accepted name is based.

NAMES IN USE

Hog's Haw (La.).
Red Haw (La.).
Pomette Bleue (La.).
Engelmann's Thorn (lit.).

Cratægus saligna Greene. **Willow Thorn.**

RANGE.—Colorado (at elevations usually above 5,000 feet in mountain valleys and along the Cimarron, White, and Gunnison Rivers and their tributaries).

NAMES IN USE

Willow Thorn (lit.).
Green's Thorn (lit.).
Black Haw (Colo.).

GROUP 20: MACRACANTHÆ Loudon

Cratægus tomentosa Linnæus.[70] **Pear Haw.**

RANGE.—From New York (Hudson River near Troy) to eastern Pennsylvania (Chestnut Hill); west through central New York to Ohio, southwestern Ontario, southern Michigan (as far north as Roscommon County), Indiana, and Illinois to central Minnesota, Iowa, Missouri, and eastern Kansas; Allegheny Mountains to northern Georgia, Alabama, and middle Tennessee (near Nashville).

NAMES IN USE

Black Thorn (R. I., N. J., Pa., Del., Ga., Ky., Ill., Ind., Ohio).
Pear Haw (Ohio).
Red Haw (Mo.).
Pear Thorn (R. I., N. J., Mich.).
White Thorn.
Thorn (N. Y., Ky.).
Common Thorn (Pa.).
Hawthorn.
Thorn-apple (Ill).
Thorn Plum.

Cratægus chapmanii (Beadle) Ashe.

RANGE.—Virginia to northern Georgia and eastern Tennessee; southern Missouri (Taney County).
NOTE ON NOMENCLATURE.—Includes *Cratægus mollita* Sargent.

Cratægus gaultii Sargent.

RANGE.—Northeastern Illinois (Milton Township and Glenellyn, DuPage County, and at Mokena, Will County).

Cratægus vegeta Sargent.

RANGE.—Illinois (border of the Calumet River at Calumet).

Catægus deweyana Sargent.

RANGE.—Western and central New York (Hagaman Swamp, vicinity of Rochester, and at Rush, Portage, Castile, Silver Springs, and Ithaca).

Cratægus succulenta Link.

RANGE.—Northeastern Massachusetts (coast region); southwestern Vermont; eastern and western New York; southern Ontario; northeastern Illinois; Pennsylvania.

NAME IN USE

Fleshy Hawthorn (lit.)

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[70] W. W. Eggleston in Asa Gray's New Man. Bot., ed. 7, p. 478 (1908), designates this plant as *Cratægus Chapmanii* var. *Plukenetii* Eggleston, his judgment being that the *Cratægus tomentosa* of Linnæus' Herbarium and of authors is not of Linnæus' description.

Cratægus gemmosa Sargent.

RANGE.—New York (vicinity of Albany, in Monroe and Livingston Counties); southern Ontario (vicinity of La Salle and of London); northwestern Ohio (Ottawa County); southern Michigan; northern Illinois (Cook and Fulton Counties); southern Wisconsin (vicinity of Waukesha and Madison).

Cratægus illinoiensis Ashe.

RANGE.—Illinois (Stark and Peoria Counties).

Cratægus integriloba Sargent.

RANGE.—Quebec (vicinity of Lachine Rapids, Caughnawaga, Rockfield, and Adirondack Junction).

Cratægus macracantha Koehne.

RANGE.—Western Vermont (Addison County); central and western New York; Ontario (vicinity of Toronto); Illinois (Barrington); eastern Pennsylvania (Bucks and Northampton Counties).

NAME IN USE

Spike Hawthorn (lit.)

Cratægus nuda Sargent.

RANGE.—Missouri (vicinity of Swan, Taney County).

Cratægus victorinii Sargent.

RANGE.—Quebec (Lonqueuil, opposite Montreal, in grounds of College Lonqueuil Brother Victorin; Outremont, Montreal Island, Brother Victorin).

GROUP 21: DOUGLASIANÆ (Loudon) Sargent

Cratægus douglasii Lindley. **Western Thornapple.**

RANGE.—From British Columbia (Parsnip River) through Washington and Oregon to California (Pitt River); eastward in the United States through the northern Rocky Mountain region to Wyoming (Big Horn Mountains).

NAMES IN USE

Thorn Apple (Cal., Utah, Wash., Idaho, Nev.).
Hawthorn (Calif.).
Black Haw (Mont.).
Western Haw (Oreg.).
Thorn (Mont., Idaho).
Haw (Oreg.).
Black Thorn (Idaho, Wash.).
Western Hawthorn.
River Hawthorn.
Wild Hawthorn.
Thorn-tree.
Wild Thorn (Oreg.).
Western Thornapple.
Black Hawthorn (lit.).

Cratægus rivularis Nuttall.

RANGE.—Southeastern Idaho (Bannock County); from northeastern Nevada (Elk County) to southwestern Wyoming, eastern Utah, southwestern Colorado, and northern New Mexico.

NAME IN USE

River Hawthorn (lit.)

GROUP 22: ANOMALÆ Sargent

Cratægus scabrida Sargent.

RANGE.—Quebec (vicinity of Montreal) to southern Ontario (vicinity of Toronto); western New York; western Vermont; southern New Hampshire; western Massachusetts.

Cratægus virilis Sargent.

RANGE.—Southern Ontario (vicinity of Toronto).

Cratægus kingstonensis Sargent.

RANGE.—Ontario (vicinity of Kingston).

CERCOCARPUS Humboldt, Bonpland, and Kunth

Cercocarpus traskiæ Eastwood. **Bigleaf Mountain Mahogany.**

RANGE.—Southern California (southern coast of Santa Catalina Island).

NAME IN USE

Bigleaf Mountain Mahogany

Cercocarpus ledifolius Nuttall.[71] **Curlleaf Mountain Mahogany.**

RANGE.—From eastern Washington and Oregon to Wyoming (Lower Green and Snake Rivers), through Nevada and Utah to southwestern Colorado; California (eastern slope of Sierras and north side of the San Bernardino Mountain; on Mount Pinos, and in the coast region from Snow Mountain to Scott Mountains).

NAMES IN USE

Mountain Mahogany (Calif., Utah, Idaho).

Curlleaf Mountain Mahogany.

Cercocarpus betuloides Nuttall. **Birch-leaf Mountain Mahogany.**

RANGE.—California (coast mountains to San Bernardino Mountains).

NOTE ON NOMENCLATURE.—Formerly designated as *Cercocarpus parvifolius* var. *betuloides* Sargent.

NAME IN USE

Birch-leaf Mountain Mahogany

Cercocarpus alnifolius Rydberg. **Alder-leaf Mountain Mahogany.**

RANGE.—California (Santa Catalina and Santa Cruz Islands).

NOTE ON NOMENCLATURE.—Includes *Cercocarpus parvifolius* Sargent, in part, not Nuttall.

NAME IN USE

Alder-leaf Mountain Mahogany

Cercocarpus paucidentatus Britton. **Hairy Mountain Mahogany.**

RANGE.—Western Texas (mountains), southern New Mexico, and Arizona (as far north as Oak Creek Canyon); northern Mexico (mountains).

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[71] A linear- and revolute-leafed shrubby form with smaller flowers and fruit is *Cercocarpus ledifolius intricatus* M. E. Jones. This plant was originally described as *Cercocarpus intricatus* S. Watson, and by some authors it is held to be a distinct species.

NAME IN USE

Hairy Mountain Mahogany

COWANIA D. Don

Cowania mexicana D. Don. **Quinine-bush.**

RANGE.—Northern Utah and southern Colorado, and southward to Arizona and New Mexico; westward to Nevada and southern California; Mexico. Arborescent form abundant in northern and southern Arizona (Chiricahua and Huachuca Mountains).

NOTE ON NOMENCLATURE.—Designated by some authors as *Cowania Stansburiana* Torrey and as *Cowania Davidsonii* Rydberg.

NAMES IN USE

Cliff-rose. Quinine Bush (Ariz.).

AMYGDALUS Linnæus.

Amygdalus persica Linnæus. **Peach.**

RANGE.—Native of Asia. Escaped from cultivation and maintaining itself in a wild state mainly in southeastern United States.

NAME IN USE

Peach

PRUNUS Bentham and Hooker

PLUMS AND CHERRIES

Prunus nigra Aiton. **Canada Plum.**

RANGE.—New Brunswick to Ontario, Manitoba (Winnipeg River); southward to New England, central and western New York, Ohio (Loraine County), southern Michigan, Wisconsin, eastern Minnesota, and North Dakota.

NAMES IN USE

Canada Plum (Mass., N. Y., Mich., Ont.).
Red Plum (Me., Vt., Ont., Mich.).
Horse Plum (Me., Vt.).
Wild Plum (Me., Mass., Vt., N. Y.).

Prunus americana Marshall. **Wild Plum.**

RANGE.—From Connecticut and central New York to southern Ontario, central Michigan, northern Indiana, North Dakota, Manitoba, eastern Montana, and Wyoming; southward to middle Florida, Alabama, central Mississippi, Missouri, Arkansas, eastern Louisiana, eastern Kansas, Oklahoma, and in the Rockies from the eastern foothills of Colorado to New Mexico (San Miguel County); in northeastern Utah (Cache County).

NAMES IN USE

Wild Plum (R. I., N. J., Del., Pa., Va., W. Va., N. C., S. C., Ga., Fla., Ala., Miss., La., Ky., Mo., Ark., Ill., Ind., Ohio, Mich., Ont., Kans., Nebr., Iowa, Colo.).
Yellow Plum (N. Y., Del., Pa., Miss., Nebr.).
Red Plum (Del., Pa., N. C., Miss., La., Nebr.).
Horse Plum (Miss., Ark., Colo.).
Hog Plum (Colo., Mo.).
August Plum (S. C.).
Native Plum (Iowa).
Plum (Ill.).
Plum Granite.
Goose Plum (Ind.).
Sloe (Fla.).
American Plum.
Canada Plum.
Wild Red Plum.
Wild Yellow Plum.
Pomegranate.

Prunus americana floridana Sargent. **Wild Plum.**

RANGE.—Florida (vicinity of St. Marks, Wakulla County).

NAME IN USE

Wild Plum

Prunus lanata (Sudworth) Mackenzie and Bush. **Wild Plum.**

RANGE.—Southern Indiana and Illinois to Kentucky (Hickman and Ballard Counties); Missouri and Arkansas to eastern Oklahoma, Louisiana, and eastern Texas; Alabama (Dallas County);.

NOTE ON NOMENCLATURE.—Formerly designated as *Prunus americana lanata* Sudworth, and as *Prunus Palmeri* Sargent.

NAME IN USE

Wild Plum

Prunus spinosa Linnæus. **Sloe.**

RANGE.—Native of Europe. Escaped from cultivation and sparingly naturalized along roadways and in waste places from Massachusetts to eastern Pennsylvania and New Jersey.

NAME IN USE

Sloe

Prunus domestica Linnæus. **Damson Plum.**

RANGE.—Native of Europe. Escaped from cultivation and reproducing itself naturally in a few localities in eastern states about old farms.

NAMES IN USE

Damson Plum
Common Plum (lit.).

Prunus hortulana Bailey. **Wild Goose-plum.**

RANGE.—Southwestern Illinois to Iowa (Scott County), eastern Kansas, northeastern Oklahoma, and to central Kentucky and northwestern Tennessee.

NAMES IN USE

Wild Goose Plum (Tenn.).
Goose Plum (Tenn.).
Garden Wild Plum (lit.).
Hog Plum (Mo.).
Hortulan Plum (lit.).

Prunus hortulana mineri Bailey. **Wild Goose-plum.**

RANGE.—Illinois to central Missouri.

NAMES IN USE

Miner Plum (lit.).
Miner Wild Goose-plum.
Wild Goose-plum.

Prunus hortulana pubens Sargent. **Wild Goose-plum.**

RANGE.—Missouri (vicinity of Webb City, Jasper County).

NAME IN USE

Wild Goose-plum

Prunus munsonia Wight and Hedrick. **Wild Goose-plum.**

RANGE.—Southwestern Kentucky, southern Illinois, central Tennessee, northern Mississippi, central Missouri to southeastern Kansas, Arkansas to eastern Oklahoma, western Louisiana, and northern Texas. Naturalized to some extent from eastern Texas to Georgia, Kentucky, southern Ohio, and northern Missouri.

NAME IN USE

Wild Goose-plum (lit.)

Prunus mexicana S. Watson.[72] **Mexican Plum.**

RANGE.—Southeastern Kansas (Labette County) and Arkansas to western Oklahoma, western Louisiana, eastern and northern Texas; Mexico (Coahuila and Nuevo Leon).

NAMES IN USE

Big Tree Plum (lit.). Mexican Plum.

Prunus mexicana polyandra Sargent.[73] **Mexican Plum.**

RANGE.—Arkansas (known now only from Hempstead County, where it occurs about Fulton).

NAME IN USE

Mexican Plum

Prunus mexicana fultonensis Sargent. **Mexican Plum.**

RANGE.—Arkansas (near Fulton, Hempstead County).

NAME IN USE

Mexican Plum

Prunus mexicana reticulata Sargent.[74] **Mexican Plum.**

RANGE.—Northern Texas (Grayson County, where it is said to be common in the vicinity of Denison and Sherman).

NAME IN USE

Mexican Plum

Prunus angustifolia Marshall. **Chickasaw Plum.**

RANGE.—Natural range uncertain; possibly native in central Texas and Oklahoma; appears to be a tree escaped from cultivation. Widely naturalized from southern Delaware and Kentucky to eastern Kansas and south to central Florida and eastern Texas.

NAMES IN USE

Chickasaw Plum (Del., W. Va., N. C., Ga., Fla., Ala., La., Tex., Miss., Ill., Kans.).
Hog Plum (Miss., Tex.).
Yellow Plum (Fla.).

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[72] This species differs from *Prunus mexicana polyandra* Sargent, to which it is similar in general appearance, in its thicker prominently reticulate-veined leaves, shape of the fruit pit, and in the long white hairs on the under side of the leaves.

Prunus reverchonii Sargent (Oklahoma and Texas), *Prunus venulosa* Sargent (Texas), *Prunus geniculata* Harper (Florida), and *Prunus texana* Dietrich (Texas) are shrubby species.

[73] Specimens collected near Monteer, Shannon County, Mo., and at Marshall, Tex., are believed to represent this variety. The flowers appear to be distinctive in the large number (36) of long stamens they bear (Sargent).

[74] Formerly confused with *Prunus americana* Marshall, differing from this and other native species in its thick reticulate-veined leaves and in the shape of the fruit stone.

Prunus angustifolia varians Wight and Hedrick. **Chickasaw Plum.**

RANGE.—Kansas (Desha County), eastern Oklahoma, and southern Arkansas to Texas (Cherokee County); naturalized in the eastern Gulf States.

NAMES IN USE

Big Chickasaw Plum (lit.). Chickasaw Plum.

Prunus alleghaniensis Porter. **Allegheny Sloe.**

RANGE.—Southern Connecticut; central Pennsylvania (Tusseys Mountain, northwestern Huntingdon County; Bald Eagle Mountain and valley, and Alleghenies in Clearfield and Elk Counties); Virginia (Rockbridge County); North Carolina (Ashe County).

NAMES IN USE

Porter's Plum (lit.). Allegheny Sloe (lit.).
Allegheny Plum (lit.).

Prunus subcordata Bentham. **Pacific Plum.**

RANGE.—Central Oregon to central California (Cascades, Sierra Nevada, and coast range to Black Mountain).

NAMES IN USE

Wild Plum (Calif.). Pacific Plum.

Prunus umbellata Elliott. **Black Sloe.**

RANGE.—North Carolina (Stanly County) and coast region from South Carolina to Florida (Mosquito Inlet on the east coast and on the west coast from Tampa Bay) and west to eastern Texas and southern Arkansas (near Camden).

NAMES IN USE

Black Sloe (S. C., Ga., Ala., Miss.). Hog Plum (Fla.).
Southern Bullace Plum (S. C., Ala., Miss.). Wild Plum (Fla.).
Sloe.

Prunus umbellata injucunda (Small) Sargent. **Black Sloe.**

RANGE.—Central and southern Georgia (base of Stone Mountain and Little Stone Mountain, Dekalb County); occurring also in Central Alabama (Alpine Mountains, Talladega County).

NOTE ON NOMENCLATURE.—Formerly, and still, designated as *Prunus injucunda* Small, and as *Prunus mitis* Beadle.

NAMES IN USE

Hog Plum. Black Sloe.

Prunus umbellata tarda (Sargent) Wight. **Black Sloe.**

RANGE.—From northeastern Texas (vicinity of Marshall, Harrison County) to western Louisiana, southern Arkansas, and western Mississippi.

NOTE ON NOMENCLATURE.—Formerly designated as *Prunus tarda* Sargent.

NAME IN USE

Black Sloe

Prunus tenuifolia Sargent.[75]

RANGE.—Texas (known now only from Cherokee County, where it was found in oak woods in the vicinity of Jacksonville and Larissa).

[75] Distinguished from other Texas plum trees by its pale, deeply furrowed bark, thin leaves, and oblong fruit, which has a thin, flat stone.

Prunus emarginata (Douglas) Walpers. **Bitter Cherry.**

RANGE.—From Montana (upper Jocko River) through the mountains of Idaho and Washington and southern British Columbia to Vancouver Island; south through western Washington, Oregon, and northern California (on coast ranges to near San Francisco Bay); southward in California (on western slopes of the Sierras to the Yosemite Valley; and on eastern slopes of the Sierras to Lake Tahoe and vicinity of Carson City, Nev.; also on Santa Lucia, San Rafael and San Bernardino Mountains; Nevada (Washoe Mountain); Arizona (San Francisco, Santa Catalina, and Chiricahua Mountains).

NAMES IN USE

Wild Plum (Calif.).
Bitter Cherry (Idaho, Calif., Oreg.).
Wild Cherry (lit., Oreg.).
Quinine Cherry (Oreg.).
Bitter Red Cherry (lit.).
Red Cherry (Calif.).

Prunus emarginata villosa Sudworth. **Bitter Cherry.**

RANGE.—Within the range of the species.

NOTE ON NOMENCLATURE.—Formerly designated as *Cerasus mollis* Douglas, *Prunus mollis* Walpers, not Torrey, *Prunus emarginata* var. *mollis* Brewer, and within recent years as *Cerasus prunifolia* Greene, *Prunus prunifolia* (Greene) Shafer.

NAMES IN USE

Bitter Cherry.
Woollyleaf Cherry (lit.).

Prunus pennsylvanica Linnæus fils. **Pin Cherry.**

RANGE.—From Newfoundland to Hudson Bay (near Big River), and west to British Columbia (eastern slopes coast ranges in valley Fraser River); south to Pennsylvania and central Michigan, northern Illinois, central Iowa and along the Allegheny Mountains to western North Carolina and eastern Tennessee.

NAMES IN USE

Wild Red Cherry (Me., Vt., N. H., Mass., R. I., Conn., N. Y., N. J., Pa., Va., N. C., Mich., Ontario, Ill., Wis., Iowa, Minn.).
Pin Cherry (N. H., Vt., N. Y., Mich., Iowa).
Pigeon Cherry (Vt., N. H., R. I., N. Y., Ontario).
Wild Cherry (N. Y., Tenn.).
Bird Cherry (Me., N. H., N. Y., Pa., Minn., Iowa).
Red Cherry (Me., R. I.).
Fire Cherry (N. Y.).

Prunus pennsylvanica saximontana Rehder. **Pin Cherry.**

RANGE.—Manitoba to Montana, Wyoming and Colorado.

NAME IN USE

Pin Cherry

Prunus cerasus Linnæus. **Sour Cherry.**

RANGE.—Europe. Escaped from cultivation and running wild in various localities in eastern United States.

NAMES IN USE

Sour Cherry (lit.).
Morello.
Pie Cherry (lit.).

Prunus mahaleb Linnæus. **Mahaleb Cherry.**

RANGE.—Europe. Escaped from cultivation and running wild from Ontario to eastern Pennsylvania; eastern Kansas.

NAMES IN USE

Mahaleb Cherry.
Perfume Cherry.
St. Lucie Cherry (lit.).

Prunus avium Linnæus. **Sweet Cherry.**

RANGE.—Europe. Escaped from cultivation and running wild in various localities in eastern United States.

NAMES IN USE

Sweet Cherry.
English Cherry.
Crab Cherry (lit.).
Gean (lit.).
Mazzard (lit.).

Prunus virginiana Linnæus.[76] **Choke Cherry.**

RANGE.—From Newfoundland to Labrador and Hudson Bay region south to North Carolina (Buncombe and Iredell Counties); northern Kentucky; west to Saskatchewan, eastern North Dakota and South Dakota, eastern Nebraska, northern Missouri, and northern Kansas.

NAMES IN USE

Choke Cherry (Mich., Wis., Iowa).
Wild Cherry.
Common Chokecherry (lit.).

VARIETIES DISTINGUISHED IN CULTIVATION

Prunus virginiana leucocarpa Watson. **White Choke Cherry.**
Prunus virginiana pendens Sudworth. **Weeping Choke Cherry.**
Prunus virginiana nana (Du Roi) Dippel. **Dwarf Choke Cherry.**

Prunus virginiana demissa (Nuttall) Torrey. **Western Choke Cherry.**

RANGE.—From western Nebraska and Kansas westward, throughout the mountains of western United States and northward to northern British Columbia.

NOTE ON NOMENCLATURE.—Formerly designated as *Prunus demissa* (Nuttall) Walpers.

NAMES IN USE

Wild Cherry (Calif., N. Mex., Utah, Idaho, Mont., Oreg.).
Choke Cherry (Calif., Nev., Idaho, Utah).
California Cherry (Calif.).
Western Choke Cherry (lit.).
Columbian Wild Cherry (lit.).

Prunus virginiana melanocarpa (A. Nelson) Sargent.[77] **Western Choke Cherry.**

RANGE.—Western Dakotas and Nebraska to southern Colorado, New Mexico, and southern Arizona to the Pacific Coast, where it ranges from southern California to British Columbia.

NAMES IN USE

Black Western Chokecherry (lit.).
Western Choke Cherry.

[76] In dry poor soils the Choke Cherry is always shrubby, becoming arborescent only in rich moist soils in the vicinity of streams and springs.

[77] This, the *Prunus demissa melanocarpa* of A. Nelson, is treated by some authors as a distinct species (Coulter and Nelson, New Man. *Bot. Cent. Rky. Mts.*, 270, 1906: Britton and Shafer, North Am. Trees, 504, 1908; Rydberg, Flor. Rky. Mts. and Adj. Pl., 452, 1917).

Prunus cuthbertii Small.

RANGE.—Georgia.

***Prunus serotina** Ehrhart.[78] **Black Cherry.**

RANGE.—From Nova Scotia westward through Canada to the northern shores of Lake Superior; southward to Florida (Lake County) and westward to North Dakota (Missouri River), eastern Nebraska and Kansas, southwestern Arkansas, Oklahoma, and eastern and western Texas (mountains).

NAMES IN USE

Wild Black Cherry (Vt., Mass., R. I., N. Y., N. J., Del., Pa., N. C., Ala., Miss., La., Ky., Mo., Ill., Iowa, Wis., Kans., Nebr., Minn., Ohio, S. Dak. (cult.) Ontario).
Wild Cherry (Conn., N. J., Pa., Del., W. Va., N. C., S. C., Ala., Fla., Tex., Ark., Ky., Ind., Ill., Iowa, Wis.).
Black Cherry (Me., N. H., Vt., R. I., N. Y., Miss., Md., Va., N. C., Ky., Mich., Wis., Ind., Nebr.).
Rum Cherry (N. H., Mass., R. I., Miss., Nebr.).
Whisky Cherry (Minn.).
Choke Cherry (Mo., Wis., Iowa).
Cherry (trade).
Cabinet Cherry.

Prunus serotina neomontana Sudworth. **Mountain Black Cherry.**

RANGE.—Southwestern Virginia ("balds" on White Top Mountain); Alabama (Talladega and Clay Counties).

NOTE ON NOMENCLATURE.—Designated formerly as *Prunus serotina montana* Britton, and as *Padus serotina neomontana* (Sudworth) Small.

NAMES IN USE

Mountain Black Cherry (lit.). Black Cherry.

VARIETIES DISTINGUISHED IN CULTIVATION

Prunus serotina penduliformis Sudworth. **Weeping Black Cherry.**
Prunus serotina asplenifolia Dippel. **Fernleaf Black Cherry.**

Prunus virens Shreve. **Southwestern Black Cherry.**

RANGE.—New Mexico, Arizona, and western Texas (Guadaloupe Mountains)

NAME IN USE

Southwestern Black Cherry

Prunus virens rufula (Wooton and Stanley) Sargent. **Southwestern Black Cherry.**

RANGE.—Arizona (type locality, on West Fork of Gila River).

NAME IN USE

Southwestern Black Cherry

Prunus alabamensis Mohr. **Alabama Cherry.**

RANGE.—Central Alabama (mountain region at elevations of from about 1,000 to 1,200 feet; Alpine, Talladega, Crumpler's, Talladega County; Red Mountain, Jefferson County).

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[78] *Prunus eximia* Small (= *Padus eximia* Small) is recognized as distinct (Britton and Shafer, North Am. Trees, 505, 1908). It appears to be closely related to *Prunus serotina* Ehrhart, and attains a height sometimes of 60 or 70 feet. Its range is given as southern Texas, where it is said to occur in river valleys. I have not seen this cherry, which needs to be studied in its possible relationship to *Prunus serotina* Ehrhart as represented in Texas and northern Mexico.

NAMES IN USE

Alabama Cherry (lit.).
Wild Cherry (lit.).

Prunus australis Beadle.

RANGE.—Southern Alabama (known now only from the vicinity of Evergreen, where it is common).

Prunus caroliniana (Miller) Aiton. **Laurel Cherry.**

Range.—Coast region and islands (15 to 20 miles inland) from North Carolina (Cape Fear River) to Florida (Biscayne Bay and Kissimmee River); west in the Gulf region through southern Alabama, Mississippi, Louisiana, and Texas (to Guadalupe River).

NAMES IN USE

Wild Peach (Miss., La., Tex.).
Wild Orange (N. C., S. C., Miss., Tex.).
Mock Orange (N. C., S. C., Ala., Miss., La., Tex.).
Laury Mundy (La.).
Laurii amande (La.).
Cherry Laurel (Fla.).
Evergreen Cherry (Tex.).
Mock Olive (Fla.).
Carolinian Cherry (lit.).
Laurel Cherry (Ala.).
Carolina Cherry-laurel (hort.).

Prunus myrtifolia Urban.[79] **West Indian Cherry.**

RANGE.—Florida (Biscayne Bay and on Long Key); West Indies; Brazil.
NOTE ON NOMENCLATURE.—Formerly designated as *Prunus sphaerocarpa* Swartz.

NAME IN USE

West Indies Cherry (Fla.)

Prunus ilicifolia (Nuttall) Walpers. **Hollyleaf Cherry.**

RANGE.—California (from San Francisco Bay through the coast ranges; also on western slopes of San Bernardino Mountains and on Santa Cruz and Santa Rosa islands); Lower California.

NAMES IN USE

Spanish Wild Cherry (Calif.).
Islay (Calif.).
Evergreen Cherry (Calif.).
Hollyleaf Cherry (Calif.).
Oakleaf Cherry (Calif.).
Holly Cherry (Calif.).
Wild Cherry (Calif.).
Holly (Calif.).
Mountain Evergreen Cherry (Calif.).

Prunus lyonii (Eastwood) Sargent.[80] **Catalina Cherry.**

RANGE.—Southern California (coast islands, especially Santa Catalina); Lower California.
NOTE ON NOMENCLATURE.—Formerly designated as *Prunus ilicifolia integrifolia* Sudworth.

NAME IN USE

Catalina Cherry

[79] Britton and Shafer (op. cit., 510) have adopted for *Prunus myrtifolia* Urban "*Laurocerasus myrtifolia* (Linnæus) Britton."
[80] This cherry was formerly considered a varietal form of *Prunus ilicifolia* (Nuttall) Walpers. Later study, however, has shown it to be specifically distinct, and also that the varietal name *integrifolia* Sudworth is in conflict with *Prunus integrifolia* Walpers, published long ago and applied to a different cherry. This discovery made it necessary to rename the tree *Prunus lyonii* (Eastwood) Sargent, which is based on *Cerasus Lyoni* Eastwood (Handbook Trees of Calif. 54, 1905). Britton and Shafer (op. cit., 512), treating the evergreen-leaved cherries as generically distinct from the deciduous-leafed species, designated this species as *Laurocerasus Lyoni* (Eastwood) Britton.

CHRYSOBALANUS Linnæus

Chrysobalanus icaco Linnæus. **Coco-plum.**

RANGE.—Southern Florida (on the east coast from Cape Canaveral to Biscayne Bay, and on the west coast from Caloosahatchee River to the southern Keys); West Indies to South America (northern and eastern coast of southern Brazil); Africa (west coast from Senegambia to Congo country).

NAMES IN USE

Coco-plum (Fla.). Gopher Plum (Fla.).

Chrysobalanus icaco pellocarpa A. deCandolle.

RANGE.—Florida (Dade County); Bahamas and Jamaica.

Family LEGUMINOSÆ

PITHECOLOBIUM Martius

Pithecolobium unguis-cati (Linnæus) Martius. **Florida Cats-claw.**

RANGE.—Florida (Lee County) and southern Keys; West Indies to Venezuela and New Granada.

NOTE ON NOMENCLATURE.—Formerly designated as *Zygia Unguis-Cati* (Linnæus) Sudworth.

NAMES IN USE

Cat's Claw (Fla.). Florida Catsclaw.
Long Pod (Fla.). Blackbead (lit.).

Pithecolobium brevifolium Bentham.[81] **Huajillo.**

RANGE.—Texas (Lower Rio Grande River from Rio Grande City to mouth of the river); Mexico (mouth of Rio Grande to the Sierra Madre, Nuevo Leon).

NOTE ON NOMENCLATURE.—Formerly designated as *Zygia brevifolia* (Bentham) Sudworth.

NAME IN USE

Huajillo

Pithecolobium flexicaule (Bentham) Coulter.[82] **Texas Ebony.**

RANGE.—Gulf Coast of Texas (from Matagorda Bay) to Mexico (Sierra Madre in Nuevo Leon); Lower California.

NOTE ON NOMENCLATURE.—Formerly designated as *Acacia flexicaulis* Bentham, and as *Zygia flexicaulis* (Bentham) Sudworth.

NAMES IN USE

Ebony (Tex.). Texas Ebony (lit.).

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[81] J. K. Small (Flor. So. E. U. S., 576, 1903) has established a new genus *Harvardia*, under which this species appears as *Harvardia brevifolia* (Bentham) Small. In this sequence should be noted the occurrence in southern Florida (keys) of *Pithecolobium Guadalupense* Chapman. I have not seen this plant in Florida where it appears to be a shrub. In the Bahamas, however, it becomes a small tree, and on this ground Britton and Shafer (North. Am. Trees, 516, 1908) very properly have added it to our tree flora.

[82] J. K. Small (l. c.) has established the genus *Siderocarpos*, in which this species is placed as *Siderocarpos flexicaulis* (Bentham) Small.

ALBIZZIA Durazzini

Albizzia julibrissin Durazzini. Silktree.

RANGE.—Native of southwestern Asia. Widely planted for ornament in southern United States as far north in Atlantic coast region as the District of Columbia. Escaping from cultivation it is growing in a wild state at various points from Virginia to Florida and westward to Louisiana.

According to Dr. J. K. Small (in letter of September 13, 1923) *Albizzia lebbek* Bentham, a native of Africa and much planted for shade in the West Indies, has become established in southern Florida.

Julibrissin (lit.).
Silk Tassel-tree (lit.).
Albizzia (Calif.).
Constantinople Acacia (Calif.).
Silk Tree (lit.).
Mimosa.

LYSILOMA Bentham

Lysiloma bahamensis Bentham. Wild Tamarind.

RANGE.—Florida (border of Biscayne Bay near Miami; Keys Largo, Elliotts, Plantation, Boca Chica); Bahamas, and Cuba.

NOTE ON NOMENCLATURE.—Formerly designated as *Lysiloma latisiliqua* (Linnæus) Bentham, which is a similar but different plant, with which the Wild Tamarind was previously confused.

NAME IN USE

Wild Tamarind (Fla.).

Lysiloma watsoni Rose.

RANGE.—Southern Arizona (south slope of Rincon Mountains); Mexico (vicinity of Alamos and Baranca).

ACACIA Adanson

Acacia farnesiana (Linnæus) Willdenow.[83] Huisache.

RANGE.—Probably native in America from Rio Grande River to Northern Chile. Widely cultivated in the United States and naturalized from the Gulf Coast Region to southern California.

NAMES IN USE

Huisache (Tex.).
Cassie (Tex.).
Sweet Acacia (lit.).

Acacia tortuosa (Linnæus) Willdenow.[84] Catclaw.

RANGE.—Southwestern Texas (valley of the Rio Cibolo to the vicinity of Eagle Pass, Maverick County). It occurs also, or what is believed to be the same tree, in Mexico, West Indies, Venezuela, and Galapagos Islands.

NAME IN USE

Catclaw

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[83] J. K. Small (Flor. So. E. U. S., 578, 1903) and Britton and Shafer (North Am. Trees, 525, 1908) have taken up for this tree the name *Vachellia Farnesiana* (Linnæus) Wight and Arnott.

[84] There may be reason for doubting that *Acacia tortuosa* (Linnæus) Willdenow as it occurs within our borders is the same species as the one which occurs in Mexico, etc. Britton and Shafer (North Am. Trees, 524, 1908) believe the west Texas tree is not the same as the one occurring in Mexico, and they have, therefore, applied to the former the name *Acacia subtortuosa* Shafer. George Bentham and Asa Gray believed the west Texas *acacia* to be identical with the West Indian and Mexican tree, as also does C. S. Sargent (Man. Trees N. A., 542, 1905; ed. 2, 593, 1922).

Acacia wrightii Bentham. **Catclaw.**

RANGE.—Western Texas (valley of the Guadalupe River in the vicinity of New Braunfels) to Mexico (Sierra Madre in Nuevo Leon).

NAMES IN USE

Cat's Claw (Tex.). Texas Cats-claw.

Acacia greggii Gray. **Catclaw.**

RANGE.—From western Texas (Rio Grande) through southern New Mexico and Arizona (to Grand Canyon) to southern California; Nevada (Clark County); northern Mexico and Lower California.

NAMES IN USE

Cat's Claw (Tex., Calif., Ariz.).,
Paradise Flower (N. Mex.).
Devil's Claw
Ramshorn.
Uña de Gato.
Wait-a-bit (Ariz.).

Acacia emoriana Bentham. **Catclaw.**

RANGE.—Texas (Uvalde County in vicinity of Montell, and along Devil's River).

NAME IN USE

Catclaw

LEUCÆNA Bentham

Leucæna greggii S. Watson.

RANGE.—Western Texas (Upper San Saba River to Devil's River); and southward into Mexico.

NOTE ON NOMENCLATURE.—Formerly designated as *Leucæna glauca* (Linnæus) Bentham.[85]

Leucæna pulverulenta (Schlechtendal) Bentham.

RANGE.—Texas (a few miles above the mouth of the Rio Grande); Mexico (from Matamoras to Monterey in Nuevo Leon, and southward to a point near the city of Mexico).

NAMES IN USE

Mimosa. Chalky Leucæna (lit.).

Leucæna retusa Bentham.

RANGE.—Texas (Jeff Davis, Kimble, Real, Uvalde, and Valverde Counties); southern New Mexico (fide J. K. Small, Flor. So. U. S., 579, 1913).

PROSOPIS Linnæus

Prosopis juliflora (Swartz) de Candolle.[86] **Mesquite.**

RANGE.—Western Texas and New Mexico (to Bernalillo County).

NAMES IN USE

Mesquite (Tex., N. Mex.).
Honey Locust (Tex., N. Mex.).
Ironwood (Tex.).
Honey Pod (Tex.).

[85] *Leucæna glauca* (Linnæus) Bentham is now believed to occur naturally only on the island of Key West, where I have seen it only as a shrub, and for this reason it is excluded from our tree flora. However, Britton and Shafer (op. cit., 527) include it, with the statement, "A shrub, rarely becoming a tree 10 meters tall." *Leucæna greggii* S. Watson, the name which properly designates our West Texas tree, was technically published in 1888, but subsequently it appears to have been overlooked.

[86] *Prosopis juliflora* (Swartz) de Candolle as it occurs in western Texas and in eastern New Mexico is commonly a low, shrubby plant growing from a huge root system, but sometimes becoming a small tree.

Prosopis juliflora glandulosa (Torrey) Cook. **Honey Mesquite.**

RANGE.—From southern Kansas to southern California and southward to western Oklahoma, through eastern Texas into Mexico.

NOTE ON NOMENCLATURE.—Formerly, and still, designated as *Prosopis glandulosa* Torrey.

NAMES IN USE

Honey Mesquite.
Mesquite (hort.).

Prosopis juliflora velutina (Wooton) Sargent.[87] **Mesquite.**

RANGE.—Dry valleys of southern Arizona and the State of Sonora, Mexico.

NOTE ON NOMENCLATURE.—Formerly confused, in part, with *Prosopis juliflora* (Swartz) de Candolle. In 1898 it was described as *Prosopis velutina* Wooton, under which it is still maintained by some authors. It seems preferable, however, to consider this a variety of the common Mesquite.

NAME IN USE

Mesquite

Prosopis odorata Torrey and Fremont.[88] **Screwbean Mesquite.**

RANGE.—Western Texas (valley of Rio Grande from Devil's River to El Paso); west through New Mexico, Arizona, southern borders of Utah and Nevada to California (arid region of Colorado Basin to San Diego County); northern Mexico.

NOTE ON NOMENCLATURE.—Formerly, and still, designated as *Prosopis pubescens* Bentham.

NAMES IN USE

Screwbean (Tex., Utah, N. Mex., Ariz., Nev., Calif.).
Screw-Pod Mesquite (Tex., Utah, Ariz., N. Mex., Calif.).
Tornillo (Tex., Utah, N. Mex., Ariz., Nev.).
Mescrew (Nev.).
Screwbean Mesquite (Ariz.).

TAMARINDUS Linnæus

Tamarindus indica Linnæus. **Tamarind.**

RANGE.—Native of Egypt, Arabia, East Indies, and West Indies. Widely cultivated in tropical countries. Naturalized in southern Florida and on a number of the keys.

NAME IN USE

Tamarind

CERCIS Linnæus

Cercis canadensis Linnæus. **Redbud.**

RANGE.—From New Jersey (Delaware River) southern Ontario, and southern Michigan (Grand and Raisin Rivers) to Florida (Tampa Bay), northern Alabama (Tennessee River to Madison, Monte Sano, Cullman, Tuscaloosa), and Mississippi; west to Missouri, western and southeastern Oklahoma, southwestern Arkansas, Louisiana, Texas (Brazos River); Mexico (Sierra Madre in Nuevo Leon).

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[87] *Prosopis juliflora constricta* Sargent is a shrub known now only near Shreveport, Caddo Parish, La.

[88] Britton and Shafer (op. cit., 531) have taken up for this species the name *Strombocarpa odorata* (Torrey) A. Gray, based either on *Strombocarpa odorata* Torrey (1853) or on *Prosopis odorata* Torrey (in Fremont's Rept., 1845). The genus *Strombocarpa* A. Gray (1845) is commonly treated as a synonym of *Prosopis* Linnæus (1767).

NAMES IN USE

Redbud (Mass., N. Y. (cult.), N. J., Pa., Del., D. C., Va., W. Va., N. C., S. C., Ala., Fla., Ark., Miss., La., Tex., Mo., Ill., Ind., Mich. (cult.)).
Judas-tree (Mass., R. I., N. Y. (cult.), N. J., Del., Pa., D. C., Va., N. C., S. C., Miss., La., Tex., Ky., Ill., Ind., Ohio, Mich., Minn. (cult.)).
Red Judas-tree.
Salad-tree (Del.).
Canadian Judas-tree (lit.).
American Redbud (lit. and hort.).
June Bud.

VARIETY DISTINGUISHED IN CULTIVATION

Cercis canadensis plena Sudworth. **Double Redbud.**

Cercis reniformis Engelmann.[89] **Texas Redbud.**

RANGE.—Eastern Texas (from near Dallas) to Mexico (Sierra Madre in Nuevo Leon).

NAMES IN USE

Redbud (Tex.). Texas Redbud.

Cercis occidentalis Torrey. **California Redbud.**

RANGE.—California (coast ranges to lower-western slopes of the Sierras); reported from Utah ("Diamond Valley," fide Britton and Shafer). Forest Supervisor G. D. Coffman reported (1923) finding a tree at Mud Flat in Tehama County 13½ inches in diameter and 25 feet high.

NAME IN USE

California Redbud

GYMNOCLADUS La Marck

Gymnocladus dioicus (Linnæus) Koch. **Coffee-tree.**

RANGE.—From western New York and western Pennsylvania through southern Ontario, southern Michigan to Minnesota (Minnesota River), southeastern South Dakota, Iowa, eastern Nebraska, eastern Kansas, southwestern Arkansas, and northeastern Oklahoma; southward, mainly between the Mississippi River and Allegheny Mountains, to Tennessee (upper eastern and middle sections). Range somewhat extended elsewhere by seeding from cultivated trees.

NOTE ON NOMENCLATURE.—Formerly designated as *Gymnocladus canadensis* La Marck.

NAMES IN USE

Kentucky Coffee-tree (Mass., R. I. (cult.), N. Y., Pa. (cult.), Del., Va., W. Va., N. C., Tenn., Miss., Ark., Mo., Ill., Kans., Ont., Mich., Iowa, and hort.).
Coffee-nut (Ky., Mo., Ill., Ind., Nebr.).
Coffee-tree (W. Va., Ark., Ky., Nebr.).
Coffeebean (Ill., Kans., Nebr.).
Coffeebean-tree (Ky., Ark., Tenn.).
Mahogany (N. Y.).
Nicker-tree (Tenn.).
Stump-tree (Tenn.).
Mahogany Bean (Md.).
American Coffee-bean.
Kentucky Mahogany.

[89] Mss. in Gray, Plantæ Lindheimerianæ (Boston Journ. Nat. Hist., VI, No. II, 177, 1850). The history of this name is somewhat perplexing. Asa Gray (l. c.) described this species as follows: "*Cercis occidentalis* (Torr. ined.). Var. *floribus etiam paulo minoribus foliis supra nitidioribus*. *C. reniformis*, Engelm. Mss." C. S. Sargent did not believe *Cercis reniformis* Engelmann to have been thus formally established for the Texas Redbud. He therefore renamed the tree *Cercis Texensis*, Sargent (Gard. and For., IV, 448, 1891). I am, however, convinced that Dr. Gray thus intended to establish *Cercis reinformis* Engelmann and actually did it by citing the name in connection with his description of the plant.

GLEDITSIA Linnæus

*Gleditsia triacanthos Linnæus.[90] Honey Locust.

RANGE.—From Pennsylvania (western slopes Allegheny Mountains) west through southern Ontario and Michigan to southeastern Minnesota, eastern Nebraska and Kansas, Oklahoma, and southwestern Arkansas; south to Georgia and northern Alabama, western Florida, Mississippi, and Texas (to Brazos River). Range more or less extended elsewhere by seeding from cultivated trees.

NAMES IN USE

Honey Locust (Vt., N. H., Mass., R. I., N. Y., N. J., Pa., Del., D. C., Va., W. Va., N. C., S. C., Ga., Fla., Ala., Miss., La., Tex., Ark., Ky., Tenn., Mo., Ohio, Ill., Ind., Kans., Nebr., Mich., Iowa).
Black Locust (W. Va., Miss., Tex., Ark., Kans., Nebr.).
Sweet Locust (S. C., La., Kans., Nebr.).
Three-thorned Acacia (Mass., R. I., La., Tex., Iowa, Nebr., Mich., Ont.).
Thorn Locust (N. Y., Ind., La.).
Thorntree (N. Y., Ind., La.).
Thorny Locust (N. J.).
Locust (Nebr., N. C.).
Honey (R. I., N. J., Iowa).
Honey Shucks (R. I., N. J., Va., Fla., Iowa).
Thorny Acacia (Tenn.).
Honey-Shucks Locust (Ky.).
Piquant Amourette (La.).
Confederate Pintree (Fla.).
Thorn Tree (Ky., Tenn.).
Common Honey Locust (lit.).
Sweet-bean.
Squeak-bean.

Gleditsia texana Sargent. Texas Honey Locust.

RANGE.—Southeastern Texas (Brazos River bottom-lands in the vicinity of Brazoria); Louisiana (Red River, near Shreveport); Mississippi (Yazoo City); Indiana (Dan's Pond, Knox County; roadside one-half mile west of Skelton, Gibson County).

NOTE ON NOMENCLATURE.—Probably a hybrid between *Gleditsia aquatica* Marshall and *Gleditsia triacanthos* Linnæus.

NAME IN USE

Texas Honey Locust

Gleditsia aquatica Marshall. Water Locust.

RANGE.—Coast region, from South Carolina to Florida (Matanzas Inlet) from which it extends along the Gulf Coast (not in Alabama) to Texas (Brazos River); northward through western Louisiana and southern Arkansas, southern Missouri, middle Kentucky and Tennessee, western and southern Illinois and Indiana.

NOTE ON NOMENCLATURE.—Formerly designated as *Gleditsia monosperma* Walter.

NAMES IN USE

Water Locust (Fla., La., Tex., Mo., Ind., Ill.).
Black Locust (N. C.).
Swamp Honey Locust.

PARKINSONIA Linnæus

Parkinsonia aculeata Linnæus. Horsebean.

RANGE.—Texas (lower Rio Grande); Arizona (in valley of Colorado River); northern Mexico and Lower California. Naturalized in Florida (Key West), Bahamas, and West Indies, as well as in other tropical countries.

NAMES IN USE

Horse-bean.
Retama (Tex.).
Crown-of-Thorns (lit.).
Spanish Broom (lit.).
Parkinsonia (lit.).
Jerusalem Thorn (hort.).

[90] Occasional individuals are without thorns (*Gleditsia triacanthos inermis* Willdenow).

Parkinsonia microphylla Torrey. **Little-leaf Horsebean.**

RANGE.—Southern Arizona (Desert region); southern California (Desert region adjoining Arizona); Lower California (adjoining California); Mexico (Sonora).

NAMES IN USE

Desert Bush.
Jerusalem Thorn.
Palo Verde (Calif.).
Horse Bean (Ariz.).
Little-leaf Horsebean.

CERCIDIUM Tulasne

Cercidium floridum Bentham. **Texas Palo-verde.**

Range.—Western Texas (Matagorda Bay to Hidalgo County) to Mexico (mouth of Rio Grande, Sierra Madre).

NAMES IN USE

Green-barked Acacia.
Palo Verde (Tex.).
Acacia.
Texas Palo-verde.

Cercidium torreyanum (Watson) Sargent. **Palo-verde.**

RANGE.—Southern California (Colorado Desert) and southern Arizona (lower Gila River Valley; Santa Catalina, Rincon, Dragoon, and Santa Rita Divisions of the Coronado National Forest); south into Mexico (Sonora) and Lower California.

NAMES IN USE

Green-barked Acacia.
Palo Verde (Ariz.).

SOPHORA Linnæus

Sophora secundiflora (Cavanilles) de Candolle.[91] **Frijolito.**

RANGE.—Southern Texas (Matagorda Bay) to New Mexico (mountain canyons) and southward into Mexico (mountain canyons of Nuevo Leon and San Luis Potosi).

NAMES IN USE

Coral Bean.
Frijolito (Tex.).
Evergreen Coral Bean (lit.).
Mescalbean (lit.).

Sophora affinis Torrey and Gray.[92] **Coralbean.**

RANGE.—Southern California (along the Southern Pacific Railroad to Mohawk Arizona, to vicinity of Imperial Junction); Arkansas (from Arkansas River) to Texas (San Antonio River and westward to the upper Colorado River; vicinity of Chisos Mountains), and southern Oklahoma (Love and Choctaw Counties) Southwestern Arkansas (near McNab); Louisiana (vicinity of Shreveport).

NAMES IN USE

Pink Locust (Tex.).
Beaded Locust (Tex.).
Deciduous Coral Bean (lit.).
Coralbean (Tex.).

[91] Leaves persistent (evergreen).

[92] Leaves deciduous.

POINCIANA Linnæus

Poinciana pulcherrima Linnæus. **Flower Fence.**

RANGE.—Origin uncertain. Supposed to be a native of Barbados. Widely cultivated in tropical countries and naturalized in southern Florida.

NAMES IN USE

Bird of Paradise Flower.
Barbados Pride.
Flower Fence.
Barbados Flower.

Poinciana regia (Rafinesque) Bojer. **Royal Poinciana.**

RANGE.—Native of Madagascar, but so widely cultivated for shade and ornament throughout the tropics that it has become naturalized in southern Florida and on many of the Keys.

NAMES IN USE

Royal Poinicana.
Flame Tree

CLADRASTIS Rafinesque

Cladrastis lutea (Michaux) K. Koch. **Yellowwood.**

RANGE.—Central Kentucky and middle and eastern Tennessee and western North Carolina (Cherokee County) to northern Alabama;[93] southeastern Missouri (Barry County) to Arkansas. Cultivated northward to Massachusetts.

NOTE ON NOMENCLATURE.—Formerly designated as *Cladrastis tinctoria* Rafinesque.

NAMES IN USE

Yellow-wood (Tenn, N. C.).
Yellow Locust (Ky., Tenn.).
Yellow Ash.
Gopherwood (Tenn.).
Virgilia (Tenn.).

EYSENHARDTIA Humboldt, Bonpland, and Kunth[94]

Eysenhardtia orthocarpa S. Watson.

RANGE.—From western Texas (upper Guadaloupe River) to southern Arizona (Santa Catalina and Santa Rita Mountains); south into Mexico (to southwestern Chihuahua and to near San Luis Potosi).

DALEA Linnæus

Dalea spinosa Gray. **Indigo Bush.**

RANGE.—Southern California (Colorado Desert—at Agua Caliente and Toras) and eastward into Arizona (to lower Gila River); south into adjacent Mexico (Sonora) and Lower California.

NOTE ON NOMENCLATURE.—Also designated as *Parosela spinosa* (Gray) Heller.

NAMES IN USE

Dalea (Calif.).
Indigo Bush (Calif.).
Smoke Tree (Calif.).

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[93] Britton Shafer (op. cit., 552) extend this range to Missouri, presumably the southwestern part. G. F. Bush, in a letter dated Jan 4, 1899, informed the writer that he had found this tree in Barry County, Mo.

[94] *Erythrina herbacea arborea* Chapman, Coralbean, occurring in southern Florida (coast region from Miami, Dade County, to the southern shores of Tampa Bay) and on the southern Keys, from 10 to 20 feet high, possibly should be added to our tree flora. There is, however, doubt as to whether it is to be considered a strictly woody plant, because, except in the tree-like form of its stem, it has no other characteristics distinguishing it from the herbaceous *Erythrina herbacea* Linnæus, which ranges in the Coast Region from North Carolina to Texas. It may be that under especially favorable conditions for growth, this species assumes tree form, which is the only distinguishing characteristic of the variety, and this might be considered an insufficient basis for creating a distinct variety. By some authors it is treated as a species, *Erythrina arborea* (Chapman) Small.

ROBINIA Linnæus

*Robinia pseudoacacia Linnæus.[95] Black Locust.

RANGE.—From Pennsylvania (on the Appalachian Mountains from Locust Ridge in Franklin County) to northern Georgia; also southern Illinois and southwestern Indiana. Widely naturalized through cultivation and other agencies throughout the United States east of the Rocky Mountains; possibly indigenous in parts of Arkansas (Crowleys Ridge, Rich Mountain, etc.), eastern Oklahoma, and also in the Great Smoky Mountains of eastern Tennessee (Sevier County).

NAMES IN USE

Locust (Me., N. H., Vt., Mass., R. I., Conn., N. Y., N. J., Pa., Del., W. Va., N. C., S. C., Ala., Miss., Tex., Ky., Tenn., Ark., Ariz., Ill., Wis., Ohio, Ind., Kans., Nebr., Mich., Iowa, Minn., trade).
Black Locust (Pa., Va., W. Va., N. C., S. C., Ala., Miss., La., Tex., Ark., Ky., Tenn., Mo., Ill., Ohio, Ind., Iowa, Kans., Nebr., Mich., Minn.).
Yellow Locust (Vt., Mass., N. Y., Pa., Del., Va., W. Va., Miss., La., Ill., Ind., Kans., Nebr., Minn.).
White Locust (R. I., N. Y., Tenn.).
Red Locust (Tenn.).
Green Locust (Tenn.).
Acacia (La.).
False Acacia (S. C., Ala., Tex., Minn.).
Honey Locust (Minn.).
Bastard Acacia (lit.).
Pea-flower Locust.
Post Locust (Md.).
Common Locust (hort.).
Silver Chain (lit.).
White Honey-flower.

VARIETIES DISTINGUISHED IN CULTIVATION

Robinia pseudoacacia decaisneana Carrière.	Pink Locust.
Robinia pseudoacacia crispa de Candolle.	Crinkleaf Locust.
Robinia pseudoacacia amplifolia Sudworth.	Broadleaf Locust.
Robinia pseudoacacia angustifolia (Loudon) Lavallee.	Little-leaf Locust.
Robinia pseudoacacia unifoliola Talou.	One-leaf Locust.
Robinia pseudoacacia tortuosa (Hoffman) de Candolle.	Twisted Locust.
Bobinia pseudoacacia pyramidalis Petzold and Kirchner.	Pyramid Locust.
Robinia pseudoacacia pendula (Ortega) Loudon.	Weeping Locust.
Robinia pseudoacacia inermis (Jacquin) Sudworth.	Parasol Locust.
Robinia pseudoacacia spectabilis (DuMont Courset) Koch.	Thornless Locust.
Robinia pseudoacacia latisiliqua Loudon.	Broadpod Locust.
Robinia pseudoacacia dissecta (Koch) Sargent.	Cutleaf Locust.
Robinia pseudoacacia glaucescens Koch.	Blue Locust.
Robinia pseudoacacia aurea (Koch) Dippel.	Goldenleaf Locust.
Robinia pseudoacacia purpurea Dippel.	Purpleleaf Locust.
Robinia pseudoacacia argenteo-variegata (Koch) Sudworth.	Spotted Locust.

Robinia neo-mexicana Gray. New Mexican Locust.

RANGE.—New Mexico (Grant County).

NAMES IN USE

Locust. New Mexican Locust (lit.).

Robinia neo-mexicana luxurians Dieck. Southwestern Locust.

RANGE.—Colorado (from Purgatory River) through northern New Mexico and Arizona (to Santa Catalina, Santa Rita, Whetstone, Patagonia, Huachuca, Chiricahua, Peloncello, and Animas Mountains) and to southern Utah; western Texas (mountains).

NOTE ON NOMENCLATURE.—Formerly not distinguished from *Robinia neo-mexicana* Gray, the hairs on the fruit of which are not glandular, as is the case in the variety.

[95] Two forms of heartwood are produced by this species, one being an olive-brown and the other yellowish green. The latter is considered the more valuable for commercial purposes. This difference in the color of the woods has given rise to two distinct common names, the darker wood being called Black Locust and the lighter wood, Yellow Locust. No botanical characteristics have been found to distinguish the two forms.

NAMES IN USE

Locust (Ariz., N. Mex.).
Western Locust.
Thorny Locust (N. Mex.).
Mexican Locust (lit.).
Southwestern Locust (lit.).

Robinia viscosa Ventenat. **Clammy Locust.**

RANGE.—Mountains of North Carolina and South Carolina. Widely naturalized by cultivation east of the Mississippi River and northward to New England.

NAMES IN USE

Clammy Locust (Mass., R. I., N. Y., N. J., Pa., N. C., S. C., La., Miss., Ill.).
Honey Locust (N. Y., N. J.).
Red-flowering Locust (Ala.).
Rose-flowering Locust (Tenn.).
Rose Acacia (Vt., R. I., Pa.).
Red Locust.

VARIETIES DISTINGUISHED IN CULTIVATION

Robinia viscosa albiflora Dippel. **White Clammy Locust.**
Robinia dubia Fouc.
Robinia bella-rosea Nicholson.

OLNEYA Gray [96]

Olneya tesota Gray. **Tesota.**

RANGE.—Southern California (from Colorado River south of Mohave Mountains) to southwestern Arizona; also in southeastern Arizona (Santa Catalina Mountains in Pima Canyon); southward through adjacent Mexico (Sonora) and Lower California.

NAMES IN USE

Iron Wood (Calif.).
Arbol de Hierro (Calif.).
Palo de Hierro (Ariz.).
Sonora Ironwood (Ariz.).
Desert Ironwood (Calif.).
Mexican Ironwood.
Tesota.

SESBANIA Scopoli

Sesbania grandiflora (Linnæus) Poiret.

RANGE.—Native of the East Indies. Widely planted in tropical countries. Introduced in southern Florida, where it has become naturalized.

NOTE ON NOMENCLATURE.—Designed by some authors as *Agati grandiflora* (Linnæus) Desvaux. It is the *Robinia grandiflora* of Linnæus.

NAME IN USE

Australian Corkwood Tree (lit.)

ICHTHYOMETHIA P. Browne

Ichthyomethia piscipula (Linnæus) A. S. Hitchcock.
Jamaica Dogwood.

RANGE.—Southern Florida (Biscayne Bay on east coast, and on the west from Peace River to Cape Sable) and southern Keys; West Indies and southern Mexico.

NOTE ON NOMENCLATURE.—Formerly designated as *Piscidia erythrina* Linnæus.

NAME IN USE

Jamaica Dogwood (Fla.)

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[96] *Coursetia axillaris* Coulter and Rose, a leguminous plant which is known now only in the vicinity of San Diego, Duval County, southeastern Texas, is said to be a small tree and probably should be included in our tree flora. The individuals I have seen, however, seem hardly to justify admitting it for the present.

Family ZYGOPHYLLACEÆ

GUAJACUM Linnæus

***Guajacum sanctum** Linnæus **Lignumvitæ.**

RANGE.—Florida Keys from Key West eastward on a number of the keys; also on the Bahamas, Porto Rico, Haiti, Cuba, and Yucatan.

NAMES IN USE

Lignumvitæ (Fla.). Ironwood (Fla.).

PORLIERA Ruiz and Pavon

Porliera angustifolia (Engelmann) A. Gray.

RANGE.—Texas and northern Mexico.
NOTE ON NOMENCLATURE.—Formerly designated as *Guaiacum angustifolium* Engelmann.

Family MALPIGHIACEÆ

BYRSONIMA Richard

Byrsonima lucida (Swartz) de Candolle.

RANGE.—Southern Florida (Keys—Long Key and Big Pine Key).

Family RUTACEÆ

XANTHOXYLUM Linnæus

Xanthoxylum clava-herculis Linnæus. **Hercules Club.**

RANGE.—Coast region from southern Virginia to Florida (Biscayne Bay and Tampa Bay); west through the Gulf States to northern Louisiana, in southern Kansas (Comanche County), eastern Oklahoma, southern Arkansas; and through Texas (to Colorado River).
NOTE ON NOMENCLATURE.—Formerly designated as *Fagara clava-herculis* (Linnæus) Small.

NAMES IN USE

Prickly Ash (N. C., S. C., Ga., Fla. Miss., La., Tex., Ark.).
Toothache-tree (N. C., S. C., Fla. Miss., La., Ark., Tex.).
Pepper-wood (Miss.).
Sea Ash (Miss., Fla.).
Southern Prickly Ash (Ala.).
Ash (Va.).
Frêne-piquant (La.).
Sting-tongue (Fla., Ark.).
Wait-a-bit, Tear-blanket (Ark.).
Wild Orange.
Hercules' Club.
Pillenterry (Va.).

Xanthoxylum clava-herculis fruticosum Gray. **Hercules Club.**

RANGE.—Western Texas.

NAME IN USE

Hercules Club

Xanthoxylum fagara (Linnæus) Sargent. **Wild Lime-tree.**

RANGE.—Southern Florida (coast and islands; on the east coast south of Mosquito Inlet and on the west coast south of latitude 29°); coast of Texas (from Matagorda Bay to the Rio Grande); West Indies; northern Mexico; Central and South America (to Brazil and Peru).

NOTE ON NOMENCLATURE.—Formerly designated as *Fagara Fagara* (Linnæus) Small.

NAMES IN USE

Wild Lime (Fla.). Wild Lime-tree.

Xanthoxylum flavum Vahl. **Satinwood.**

RANGE.—Florida Keys (Marquesas Keys, South Bahia Honda, and Boca Chico Keys); San Domingo, Porto Rico, Bahamas, and Bermuda.

NOTE ON NOMENCLATURE.—Formerly designated as *Xanthoxylum cribrosum* Sprengel and as *Fagara flava* Krug and Urban.

NAMES IN USE

Yellow-wood (Fla.). Satinwood (Fla.).

Xanthoxylum coriaceum A. Richard. **Hercules Club.**

RANGE.—Southern Florida (shores of Biscayne Bay and in the vicinity of Fort Lauderdale; also on keys); Bahamas and Cuba.

NOTE ON NOMENCLATURE.—Formerly designated as *Fagara coriacea* (A. Richard) Krug and Urban.

NAMES IN USE

Hercules' Club (Fla.). Doctor's Club (lit.).

HELIETTA Tulasne

Helietta parvifolia Bentham. **Baretta.**

RANGE.—Texas (near Rio Grande City); Mexico (south of the lower Rio Grande to the lower slopes of the Sierra Madre, Nuevo Leon).

NAME IN USE

Baretta

PTELEA Linnæus

Ptelea trifoliata Linnæus. **Hoptree.**

RANGE.—Southern Ontario (Piont Pelee, Lake Ontario); New York (Long Island); Pennsylvania and west through southern Michigan (up to Montcalm County) to southern Iowa, and southeastern Nebraska; south to Georgia and west to eastern Texas, extending also into Arkansas, Oklahoma, and Kansas, and through New Mexico to Colorado (Mimbres River); southern Arizona (Santa Catalina, Santa Rita, Chiricahua, and Animas Mountains).

NAMES IN USE

Hop-tree.
Wafer Ash.
Whahoo.
Quinine-tree (Mich.).
Shrubby Treefoil (lit.).
Three-leaved Hop-tree (lit.).
Wing-seed (lit.).
Ague-bark.

Ptelea trifoliata mollis Torrey and Gray.

RANGE.—North Carolina to Florida.

VARIETY DISTINGUISHED IN CULTIVATION

Ptelea trifoliata aurea Nicholson. **Golden Hoptree.**

AMYRIS Linnæus

Amyris elemifera Linnæus. **Torchwood.**

RANGE.—Southern Florida (from Mosquito Inlet on the east coast to the southern Keys); Bahamas, St. Thomas, Cuba, and Jamaica Islands.

NOTE ON NOMENCLATURE.—Formerly designated as *Amyris maritima* Jacquin.

NAME IN USE

Torchwood (Fla.)

Amyris balsamifera Linnæus. **Balsam Torchwood.**

RANGE.—Southern Florida; West Indies and South America.

NAMES IN USE

Rosewood. Balsam Torchwood.
Candle-wood.

CITRUS Linnæus [97]

Citrus aurantium Linnæus. **Seville Orange.**

RANGE.—Peninsular Florida.

NAMES IN USE

Bitter Orange. Seville Orange (lit.).

Citrus sinensis Engler. **Orange.**

RANGE.—Peninsular Florida and in tropical portions of other Gulf States.

NAMES IN USE

Sweet Orange. Orange.

Citrus limonia Risso. **Lemon.**

RANGE.—Peninsular Florida.

NAME IN USE

Lemon

Citrus aurantifolia Swingle. **Lime.**

RANGE.—Peninsular Florida; rather rare.

NAME IN USE

Lime

Citrus medica Linnæus. **Citron.**

RANGE.—Peninsular Florida; rare.

NAME IN USE

Citron

[97] Orange, lemon, and lime trees of Asiatic origin have long been cultivated for their fruit, and for ornament in many tropical countries, including the warmer sections of our southern border, where a number of these small trees have escaped and become naturalized. They are to be found in an apparently wild state and should be accounted for as adventive members of our tree flora.

Family SIMAROUBACEÆ

SIMAROUBA Aublet

Simarouba glauca de Candolle.[98] **Paradise-tree.**

RANGE.—Southern Florida (from Cape Canaveral on the west coast, to the southern Keys and to Biscayne Bay); Cuba, Jamaica, Nicaragua, and Brazil.

NAMES IN USE

Paradise-tree (Fla.).
Gumbo limbo (Fla.).
Bitterwood (Fla.).

PICRAMNIA Swartz

Picramnia pentandra Swartz.[99] **Bitterbush.**

RANGE.—Southern Florida (vicinity of Miami and in the Everglades near the latter place, and at Coconut Grove, Dade County); Bahamas, Porto Rico, Tobago, West Indies, and in Colombia.

NAME IN USE

Bitterbush

AILANTHUS Desfontaines

Ailanthus altissima (Miller) Swingle.[1] **Ailanthus.**

RANGE.—Native of China; but widely and permanently naturalized in eastern United States; occasional spontaneous trees are found in western United States.

NOTE ON NOMENCLATURE.—Formerly designated as *Ailanthus glandulosa* Desfontaines.

NAMES IN USE

Tree of Heaven.
Ailanthus.
Chinese Sumach.
Stinking Chun.

VARIETIES DISTINGUISHED IN CULTIVATION

Ailanthus altissima rubra (Dippel) Sudworth. **Redfruit Ailanthus.**
Ailanthus altissima pendulifolia (Dippel) Sudworth. **Drooping Ailanthus.**
Ailanthus altissima aucubaefolia (Dippel) Sudworth.

ALVARADOA Liebmann

Alvaradoa amorphoides Liebmann.

RANGE.—Southern Florida (Timb's Hammock and Long Key, Dade County); Bahamas, Cuba, and southern Mexico, central America, and Argentina.

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[98] Britton and Shafer (North Am. Trees, 584, 1908) believe that this is a Cuban species, not found within our border, and that our plant is *Simarouba medicinalis* Endlicher. For the present the author prefers to let *Simarouba glauca* de Candolle stand for our species until the two forms can be carefully studied.

[99] This species first became known within our borders in 1897 (Chapman), but it was not generally recognized as a tree of our flora until 1903 (Small) and 1908 (Britton and Shafer).

[1] W. T. Swingle, in Wash. Acad. Sc., vol. 6, 490, 1916. Professor Swingle has clearly shown that *Toxicodendron Altissimum* Miller (Gard. Dict., ed. 8, 1768) is the oldest tenable name for this Chinese tree, and therefore, that *Ailanthus altissima* (Miller) Swingle should be adopted in place of *Ailanthus glandulosa* Desfontaines, which was published 18 years later than Miller's name.

The generic term Ailanthus appears to be so generally in use as a common name for this tree that it seems desirable to continue its use. The book name, Tree of Heaven, is not in general use by laymen. Moreover, this name seems rather inappropriate, since, as Asa Gray wrote, in substance, many years ago, the tree when in flower is redolent of anything but the odors of heaven.

Family SURIANACEÆ

SURIANA Linnæus

Suriana maritima Linnæus. **Bay Cedar.**

RANGE.—Coast of southern Florida; West Indies; northern South America.

NAME IN USE

Bay Cedar

Family BURSERACEÆ

BURSERA Jacquin

Bursera simaruba (Linnæus) Sargent. **Gumbo-limbo.**

RANGE.—Southern Florida (on the east coast from Cape Canaveral to the southern Keys; west coast on Caloosahatchee River and Caximbas Bay); West Indies, southern Mexico, Guatemala, New Granada, Venezuela.

NOTE ON NOMENCLATURE.—Formerly designated as *Bursera gummifera* Linnæus (?), and recently, as *Terebinthus Simaruba* (Linnæus) W. F. Wight.

NAMES IN USE

Gum Elemi (Fla.).
Gumbo-limbo (Fla.).
West Indian Birch (Fla.).
Bitterwood.
Paradise Tree.

Bursera microphylla Gray.

RANGE.—Southern California (Imperial County—Colorado Desert); Arizona (vicinity of Maricopa; low ranges in western part of State—J. J. Thornber; Salt River Mountains; north side of Gila River; at a point 25 miles south of Phoenix); Lower California and Sonora.

Family MELIACEÆ

MELIA Linnæus

Melia azedarach Linnæus. **Chinaberry.**

RANGE.—Supposed to be a native of India. Widely cultivated in the Old and New World and naturalized by cultivation in southern United States.

NAMES IN USE

China-tree.
Pride of India.
Chinaberry.

Melia azedarach umbraculifera Sargent. **Umbrella Chinaberry.**

NAMES IN USE

Umbrella China-tree.
Umbrella Tree.
Umbrella Chinaberry.
Texas Umbrella-tree (hort.).

SWIETENIA Jacquin

***Swietenia mahagoni** Jacquin. **Mahogany.**

RANGE.—Florida Keys (Key Largo, Elliotts Key, Upper Metacumbe Key, Biscayne Bay); Bahamas, West Indies, southern Mexico, and Central America.

NAMES IN USE

Mahogany (Fla.).
Madeira (Fla.).
Redwood (Fla.).
West Indian Mahogany (lit.).
Madura-redwood.
Honduras Mahogany (trade).
Mexican Mahogany (trade).
San Domingo Mahogany (trade).
Cuban Mahogany (trade).
Costa Rica Mahogany (trade).
Guatemalan Mahogany (trade).

Family EUPHORBIACEÆ

DRYPETES Vahl

Drypetes lateriflora (Swartz) Urban. **Guiana Plum.**

RANGE.—Southern Florida (Biscayne Bay) and several of the southern Keys; Bahamas, Cuba, San Domingo, Jamaica, Porto Rico.

NOTE ON NOMENCLATURE.—Formerly designated as *Drypetes crocea* Poiteau.

NAMES IN USE

Guiana Plum (Fla.).
Whitewood (Fla.).

Drypetes diversifolia Krug and Urban.[2] **Big Guiana Plum.**

RANGE.—Florida Keys (Key West, Umbrella Key, Elliotts Key, Lower Metacumbe Key; Bahamas.

NAMES IN USE

Guiana Plum (Fla.).
Whitewood (Fla.).
Big Guiana Plum.
Larger Guiana Plum.

GYMNANTHES Swartz

Gymnanthes lucida Swartz. **Crabwood.**

RANGE.—Coast of southern Florida (from Biscayne Bay to the Marquesas Keys); Bahamas and several of the other West Indian Islands.

NAMES IN USE

Crabwood (Fla.).
Poisonwood (Fla.).

HIPPOMANE Linnæus

Hippomane mancinella Linnæus. **Manchineel.**

RANGE.—From the Keys of southern Florida through the Bahamas and West Indies to northern South America and eastern and western coast of Central America and southern Mexico.

NAME IN USE

Manchineel (Fla.)

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[2] Britton and Shafer (op. cit., 598) believe that *Drypetes keyensis* Krug and Urban (Bot. Yahrb., XV, 1893, p. 354) is the same plant as their *Drypetes diversifolia* (op. cit., 353), and they therefore took up for this tree the latter name, which is the older.

CICCA Linnæus

Cicca disticha Linnæus. **Otaheite Gooseberry.**

RANGE.—Native of India, tropical Asia, and Madagascar. Naturalized in southern Florida (in pine lands)—escaped from cultivation. Small tree.

NAME IN USE

Otaheite Gooseberry

SAVIA Willdenow

Savia bahamensis Britton.

RANGE.—Lower Florida Keys; Bahamas. Small tree of hammocks.

SAPIUM P. Browne

Sapium sebiferum (Linnæus) Roxburgh. **Tallowtree.**

RANGE.—Believed to be a native of China or Japan. Cultivated and naturalized in the South Atlantic and Gulf States.

NAMES IN USE

Tallowtree. Chinese Tallowtree.

Sapium glandulosum (Linnæus) Morong. **Milktree.**

RANGE.—Native of South America. Cultivated in Florida, where it has become naturalized (notably in the vicinity of Pensacola).

NAMES IN USE

Milk Tree. South American Milktree.

Family ANACARDIACEÆ

COTINUS Linnæus

Cotinus americanus Nuttall. **American Smoketree.**

RANGE.—Kentucky (Daviess County); Alabama (vicinity of Huntsville); southern Missouri (White River); Arkansas (Baxter and Crawford Counties); eastern Oklahoma; western Texas (Madina and Guadalupe Rivers; Kendall County).

NOTE ON NOMENCLATURE.—Formerly designated as *Rhus cotinoides* Nuttall, and as *Cotinus cotinoides* (Nuttall) Britton.

NAMES IN USE

Chittamwood (Ala.).
Yellow-wood (Ala.).
Smoke-tree (Ark., R. I., Conn.—cult.).
American Smoke-tree (lit.).
Wild Smoke-tree (lit.).

METOPIUM P. Browne

Metopium toxiferum Krug and Urban. **Poisonwood.**

RANGE.—Southern Florida (Biscayne Bay) and southern Keys; Bahamas, Cuba, Jamaica, Honduras.

NOTE ON NOMENCLATURE.—Formerly designated as *Rhus metopium* Linnæus, and as *Metopium Metopium* (Linnæus) Small.

NAMES IN USE

Poisonwood (Fla.).
Coral Sumach.
Burnwood.
Hog Gum.
Doctor Gum.

RHUS Linnæus[3]

Rhus hirta (Linnæus) Sudworth. **Staghorn Sumach.**

RANGE.—From New Brunswick (through the St. Lawrence River Valley) to southern Ontario, Minnesota, eastern North Dakota, and Iowa; south through the Northern States and along the Appalachian Mountains to Georgia; Mississippi (probably does not occur in the last two States).

NOTE ON NOMENCLATURE.—Formerly, and still, designated as *Rhus typhina* Linnæus.

NAMES IN USE

Staghorn Sumach (Vt., N. H., Mass., R. I., Conn., N. Y., N. J., Del., Pa., N. C., S. C., Miss., Mo., Mich., Wis., Ohio, Ont.).
Sumach (Me., Vt., N. Y., Pa., W. Va., Ark., Ky., Ind., Wis.).
Virginia Sumach (Tenn.).
Hairy Sumach.
Vinegar Tree (Ont.).
Velvet Sumach.

× Rhus hybrida Rehder.

RANGE.—Massachusetts (fide C. S. Sargent).

NOTE ON NOMENCLATURE.—Believed to be a hybrid between *Rhus hirta* (Linnæus) Sudworth and *Rhus glabra* Linnæus.

Rhus copallina Linnæus. **Dwarf Sumach.**

RANGE.—New England to Florida (Manitee and Caximbas Bay), and west to southeastern Iowa, eastern Nebraska and Kansas, southeastern Oklahoma and southwestern Arkansas (Rich Mountain; Hempstead County) and Texas (San Antonio River); Cuba.

NAMES IN USE

Dwarf Sumach (Vt., N. H., R. I., Mass., N. Y., Del., Pa., Ala., Fla., Miss., La., Kans.).
Sumach (Vt., Pa., W. Va., N. C., S. C., Fla., Ga., Miss., La., Tex., Ky., Mo., Kans.).
Smooth Sumach.
Mountain Sumach (Vt., Tenn.).
Black Sumach (Ark., Tex., Ga., Mo.).
Wing-rib Mountain Sumach (S. C.).
Common Sumach (S. C.).
Shining Sumach (lit.).
Dwarf Mountain Sumach (lit.).
Upland Sumach (lit.).
Varnish Sumach.

Rhus copallina leucantha (Jacquin) de Canolle. **Dwarf Sumach.**

RANGE.—Near New Braunfels, Texas (Sargent); southern Florida and on Cat Island—near the mouth of the Mississippi River (Britton and Shafer, under *Rhus leucantha* Jacquin).

NAMES IN USE

Dwarf Sumach.
Whiteflower Dwarf Sumach.

Rhus copallina lanceolata Gray. **Dwarf Sumach.**

RANGE.—Eastern Texas (to Rio Grande) and southeastern New Mexico.

NAMES IN USE

Lanceleaf Dwarf Sumach (lit.).
Dwarf Sumach.

[3] *Rhus glabra* Linnæus, Smooth Sumac, which is very commonly a shrub forming thickets, is reported by Britton and Shafer (North Am. Trees, 608, 1908) as becoming a tree 6 or 7 meters high. I have not observed it as a tree. It ranges throughout eastern United States and contiguous parts of Canada and westward.

Rhus vernix Linnæus. **Poison Sumach.**

RANGE.—Quebec and northern New England to northern and southern (R. M. Harper) Florida (Highlands County) and Alabama; west to Ontario, southeastern Minnesota, central-eastern Missouri, and eastern Texas (Neches River).

NOTE ON NOMENCLATURE.—Formerly designated as *Rhus venenata* de Candolle.

NAMES IN USE

Poison Sumach (Vt., N. H., Mass., R. I., Conn., N. Y., N. J., Del., N. C., S. C., Ala., Miss., La., Mo., Iowa, Wis., Mich., Minn., Ohio, Ont.).
Poison Elder (Vt., Mass., R. I., N. Y., Del., S. C., Ga., Ala., Miss., La., Mo., Minn.).
Poison Dogwood (N. H., Vt., Conn., N. J., Pa., D. C., Mo., Mich., Minn.).
Dogwood (Vt., Mass., R. I., Wis., Mich., Iowa, Minn., La.).
Swamp Sumach (R. I., N. Y., N. J., Tenn., Minn.)
Sumach (R. I.).
Poison Oak (La.).
Poison Ash (Vt., Pa.).
Poisonwood (Tenn.).
Poisontree.
Thunderwood (Ga.).
Swamp Dogwood.

Rhus integrifolia (Nuttall) Bentham and Hooker.[4] **Mahogany Sumach.**

RANGE.—Coast of southern California (from Santa Barbara) to Lower California (Magdalena Bay); Santa Barbara and Cedros Islands.

NAMES IN USE

Mahogany (Calif.).
California Mahogany (lit.).
California Sumach.
Sour Berry.
Western Sumach (lit.).
Lentisco (Calif.).
Sour Oak (Calif.).
Lemonade Berry (Calif.).
Mahogany Sumach.

Rhus integrifolia serrata Engler. **Mahogany Sumach.**

RANGE.—Within the range of the species.

NAME IN USE

Mahogany Sumach

Rhus laurina Nuttall.[5] **Laurel Sumach.**

RANGE.—Southern California (Santa Barbara and southward); Arizona (Pine Creek Canyon—vicinity of Natural Bridge; Verde River Canyon—vicinity of Tinsley Ranch; Oak Creek Canyon); Lower California (Cape region).

NAME IN USE

Laurel Sumach

MANGIFERA Linnæus

Mangifera indica Linnæus. **Mango.**

RANGE.—Native of tropical Asia, but widely cultivated in other tropical countries. In southern Florida growing spontaneously on hammocks and on a number of the Keys, to which it has escaped from cultivation.

NAME IN USE

Mango

[4] Britton and Shafer (op. cit., 612) designate this tree as *Neostyphonia integrifolia* (Nuttall) Shafer, based on *Styphonia integrifolia* Nuttall. *Neostyphonia* was created because Nuttall's genus *Styphonia* is invalid The writer prefers, however, to retain this as a species of *Rhus*.

[5] Usually a broad much-branched shrub 4 to 5 feet high, but in protected places with rich soil it forms a central stem 12 to 18 feet high and 10 to 12 inches in diameter.

PISTACIA Linnæus

Pistacia texana Swingle. **Texas Pistache.**

RANGE.—Southwestern Texas (along the Pecos River near its junction with the Rio Grande, and along the Rio Grande near the mouth of the Pecos on both sides of the river in Texas and Coahuila, Mexico).

NAME IN USE

Texas Pistache

Family CYRILLACEÆ

CYRILLA Linnæus

Cyrilla racemiflora Linnæus. **Swamp Ironwood.**

RANGE.—Coast region from southeastern Virginia to Florida and Georgia to near Augusta; west on Gulf Coast to Texas (Neches River); Cuba, Jamaica, Demerara, and Brazil.

NAMES IN USE

Ironwood (S. C., Ga., Fla., Miss., La.).
Leatherwood (Ala., Fla.).
He Huckleberry (S. C.).
Burnwood.
Burnwoodbark.
Firewood (Ga.).
Burning-wood (Ga.).
Red Titi (Fla.).
White Titi.
Southern Ironwood.
Bloodwood (La.).
Swamp Ironwood.

CLIFTONIA Gærtner fils

Cliftonia monophylla (LaMarck) Sargent.[6] **Titi.**

RANGE.—Coast region from South Carolina (Savannah River) to northern Florida, and west in the Gulf region to eastern Louisiana.

NAMES IN USE

Titi (S. C., Ga., Ala., Fla., Miss.).
Buckwheat-tree (Fla., La.).
Black Titi (Fla.).
Ironwood.

Family AQUIFOLIACEÆ

ILEX Linnæus

***Ilex opaca** Aiton. **Holly.**

RANGE.—Coast region from Massachusetts (Massachusetts Bay near Quincy) to Florida (Mosquito Inlet and Charlotte Harbor); from southern Indiana (through Mississippi River Valley) to the Gulf, and through Missouri, Arkansas, Oklahoma, Louisiana, and eastern Texas (Wilson County).

NAMES IN USE

Holly (R. I., Del., W. Va., Pa., N. C., S. C., Ga., Fla., Miss., La., Ark.).
American Holly (Mass., R. I., Conn., N. Y., N. J., Pa., Del., N. C., Ala. Miss., La.).
White Holly (Va.).
Evergreen Holly (Ohio).
Boxwood (trade).

[6] There appears to be some confusion as to whether N. L. Britton or C. S. Sargent is the author of this combination. Sargent published this name for the first time, in his Silva of North America, II, 7, 1891, but in that connection giving Britton as its author (in Bull. Torr., Bot., Cl., 310, 1889). However, Britton (l. c.) did not propose *Cliftonia monophylla*, but called attention to Sargent's oversight (Garden and Forest, II, 352) in not taking up *Ptelea monophylla* LaMarck, the oldest name for species. Of course, a very liberal, but an unusual interpretation of Britton's possible intention in this matter, might assign to him a combination he did not formally propose.

Ilex opaca Aiton, forma subintegra C. A. Weatherby.

RANGE.—Massachusetts (type locality in the vicinity of Mashpee—L. C. Jones); South Carolina to Florida and Mississippi; and probably elsewhere in the range of the species.

Ilex opaca arenicola Ashe.

RANGE.—Florida (Marion to Clay Counties—Common in the "scrub" region).
NOTE ON NOMENCLATURE.—Recently characterized as *Ilex tumulica* Small.

×Ilex attenuata Ashe. **Hybrid**

RANGE.—Western Florida (Walton County, on stream heads near Mossyhead Post Office).
NOTE ON NOMENCLATURE.—Supposed to be a hybrid between *Ilex opaca* and *Ilex cassine* Linnæus, with which it grows.

Ilex cassine Linnæus. **Dahoon.**

RANGE.—Coast region from South Carolina to Florida (Biscayne Bay and Tampa Bay); west on the Gulf coast to western Louisiana.
NOTE ON NOMENCLATURE.—Formerly designated as *Ilex dahoon* Walter.

NAMES IN USE

Dahoon (Holly).
Yaupon.
Cassena-bush.

Ilex cassine angustifolia Willdenow. **Dahoon.**

RANGE.—Southern Alabama.

NAMES IN USE

Narrowleaf Dahoon.
Dahoon.

Ilex cassine myrtifolia (Walter) Sargent. **Dahoon.**

RANGE.—North Carolina to Florida and Louisiana.

NAMES IN USE

Dahoon (N. C., S. C., Ga., Ala., Fla., Miss., La.).
Dahoon Holly (N. C., S. C., Fla.).
Yaupon (Fla.).
Myrtleleaf Dahoon (lit.).
Myrtle (lit.—N. C.).

Ilex krugiana Loesener.

RANGE.—Southeastern Florida (Dade County, in the vicinity of Homestead and on Paradise Key—Everglades); Bahamas, Haiti, and San Domingo.

NAME IN USE

Krugs Holly

Ilex vomitoria Aiton. **Yaupon.**

RANGE.—Coast region from southern Virginia to Florida (St. Johns River and Cedar Keys); west on the Gulf coast to Texas (Matagorda Bay, Rio Blanco, and Guadalupe River); northward in Alabama to Autauga County; west of the Mississippi River northward to southern Arkansas.

NAMES IN USE

Yopon (N. C., Ga., Ala., Miss., Tex.).
Yaupon (N. C., S. C., Fla., Miss., La.).
Cassena (N. C., S. C., Fla., La.).
Cassine (La.).
True Cassena.
Evergreen Cassena.
Cassio-berry Bush.
Emetic Holly (S. C.).
Appalachian Tea.
Carolina Tea.
Indian Black Drink.
Deer-berry.
Cassena-bush.

Ilex decidua Walter.[7] **Winterberry.**

RANGE.—From southeastern Virginia (ranging from the coast region to near the eastern base of the Appalachian Mountains) to western Florida; westward in the Gulf States to eastern Texas (Colorado River), extending northward in eastern Oklahoma, Arkansas, southern Missouri, Illinois, and Indiana.

NAMES IN USE

Holly (Tex., Ark., Mo.).
Bearberry (Miss.).
Possom Haw (Fla.).
Deciduous Holly (lit.).
Swamp Holly (lit.).
Privet (lit.).
Winterberry (Va.).
Meadow Holly (lit.).
Turkey Berry (Ind.).

Ilex decidua curtissii Fernald. **Winterberry.**

RANGE.—Western Florida. Further study of this exceptionally small-leaved form may prove it to be specifically distinct.

NAME IN USE

Winterberry

Ilex montana Torrey and Gray.[8] **Mountain Holly.**

RANGE.—From New York (Catskill Mountains and Cattaraugus County) southward in the mountains (and in Pennsylvania as far east as Northampton County) to northern Alabama, northeastern Mississippi, Louisiana (central). Arborescent chiefly in the mountains of western North Carolina, eastern Tennessee (Great Smoky Mountains), and South Carolina.

NAMES IN USE

Large-leafed Holly (lit.).
Mountain Holly (lit.).
Mountain Privet (lit.).

Family CELASTRACEÆ

EVONYMUS Linnæus

Evonymus atropurpureus Jacquin. **Wahoo.**

RANGE.—From western New York through Michigan to southern Minnesota, southeastern South Dakota, central Iowa, Nebraska, central Kansas, Oklahoma, southern Arkansas, eastern Texas; in Montana (upper Missouri River); south to eastern Tennessee and northeastern Alabama.

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[7] J. K. Small (Flor. S. E. U. S., 732, 1903) and Britton and Shafer (North Am. Trees, 621, 622, 1908) admit as small trees *Ilex verticillata* (Linnæus) A. Gray and *Ilex lævigata* (Pursh) A. Gray. I have not yet seen an arborescent form of these species, which are usually shrubs.

[8] *Ilex ambigua* (Michaux) Chapman, *Ilex Beadlei* Ashe, by some authors treated as distinct species, are here considered extreme forms of *Ilex montana* Torrey and Gray, with which they appear to be connected by intermediate forms. The Downy-leafed Holly (*Ilex monticola* var. *mollis* (A. Gray) Britton=*Ilex mollis* A. Gray), occurring from Massachusetts (Tatonic Mountains) to North Carolina, appears to be a fairly distinct shrubby variety.

Ilex montana Torrey and Gray was taken up by Britton and Shafer (op. cit., 624, 1908) for the Mountain Holly, because it is an older name than *Ilex monticola* A. Gray. The former name was first published in 1848 in the first edition of Asa Gray's Manual of Botany (p. 276), where Torrey and Gray are given as the authors. Doctor Gray seems to have changed his first name, *Ilex montana*, for this tree to *Ilex monticola*, because of the existence of *Prinos montanus* Swartz (1783), which was applied to another holly, later, in 1861, designated as *Ilex montana* Swartz. But as the latter name was, when it was made, preoccupied by the earlier *Ilex montana* Torrey and Gray, this earlier name has precedence.

NAMES IN USE

Burning Bush (R. I., N. Y., N. J., Pa., Del., Md., N. C., S. C., Miss., Ark., Ky., Ohio, Ill., Ind., Iowa, Kans., Nebr., Mich.).
Waahoo (N. Y., N. J., Pa., W. Va., N. C., S. C., Miss., Ky., Ark., Mo., Nebr., Ill., Iowa, Kans., Ohio, Ind.).
Spindletree (R. I., Del., Pa., N. C., Ill.).
Arrow-wood (Miss., La., Ill., Mo.).
Strawberry-tree (N. Y.).
Strawberry Bush (Tenn.).
"Moses in the Burning Bush" (N. J.).
Bleeding Heart (N. C.).
Indian Arrow (Ind.).
Woohaw (Ky., Ga.).
Skewerwood.
Bitter Ash.

GYMINDA Sargent

Gyminda latifolia (Swartz) Urban. **False Boxwood.**

RANGE.—Islands of southern Florida (from Marquesas to Upper Metacumbe Key); Cuba, and Porto Rico, southern Mexico and Trinidad.

NOTE ON NOMENCLATURE.—Formerly designated as *Gyminda grisebachii* Sargent.

NAMES IN USE

False Boxwood (Fla.). Gyminda.

RHACOMA Linnæus

Rhacoma crossopetalum Linnæus.

RANGE.—Southern Florida and Keys; West Indies.

SCHÆFFERIA Jacquin

Schæfferia frutescens Jacquin. **Florida Boxwood.**

RANGE.—Southern Florida (vicinity Caloosa River, and from Upper Metacumbe Key eastward, and on the reef keys); Bahamas, West Indies to Venezuela.

NAMES IN USE

Yellow-wood (Fla.). Florida Boxwood.
Boxwood (Fla.).

MAYTENUS Molina

Maytenus phyllanthoides Bentham.

RANGE.—Southern Florida (Lee and Dade Counties; southern Keys); southeastern Texas (Nueces County); northern Mexico and Lower California.

CANOTIA Torrey[9]

Canotia holacantha Torrey. **Canotia.**

RANGE.—Arizona (from White Mountain Region to the Bill Williams); southern California (Providence Mountain).

NAME IN USE

Canotia (Ariz.)

[9] The family affinities of this genus are somewhat difficult to define. It has been placed in *Rutaceæ* and in *Celastraceæ*, and Britton and Shafer (op. cit., 635) have built for it a new family, *Canotiaceæ* Britton, which seems warranted.

Family STAPHYLEACEÆ

STAPHYLEA Linnæus

Staphylea trifolia Linnæus.[10] **Bladdernut.**

RANGE.—Quebec to Ontario and westward to Minnesota; southward to Georgia, Arkansas, and Oklahoma (Rich Mountain).

NAMES IN USE

Bladdernut.
American Bladdernut (lit.).

Family ACERACEÆ

ACER Linnæus

Acer spicatum LaMarck. **Mountain Maple.**

RANGE.—From Newfoundland and Labrador to Hudson Bay and Saskatchewan (region of the Saskatchewan River); south through the Northern States (in Minnesota, Iowa, Michigan—down to Eaton County) and along the Appalachian Mountains.

NAMES IN USE

Mountain Maple (Vt., N. H., R. I., Conn., N. Y., N. J., Pa., N. C., S. C., Mich., Minn.).
Moose Maple (Vt.).
Low Maple (Tenn.).
Water Maple (Ky.).
Mountain Maple-bush.
Spiked Maple.
Goose-foot Maple.

Acer pennsylvanicum Linnæus. **Striped Maple.**

RANGE.—From Quebec (Ha-Ha Bay, on Saguenay River) westward along the shores of Lake Ontario and islands of Lake Huron to northern Wisconsin; southward in the northern and North Atlantic States (in Michigan to Roscommon County) and along the Appalachian Mountains to northern Georgia.

NAMES IN USE

Striped Maple (Vt., N. H., R. I., Mass., N. Y., Pa., N. J., S. C., Ga., Ky., Mich., Minn., Ontario).
Moosewood (Me., Vt., N. H., R. I., Mass., N. Y., Pa., N. C., Mich., Minn.).
Northern Maple (Minn.).
Striped Dogwood (N. Y., N. C.).
Mountain Alder (N. C.).
Whistlewood (Mich.).
Goose-foot Maple.
Buckwood (Pa.).

Acer macrophyllum Pursh. **Bigleaf Maple.**

RANGE.—From the coast region of Alaska (south of latitude 55°), British Columbia, and islands southward through Washington and Oregon (west of the Cascade Mountains) and California (coast ranges and western slopes of the Sierra Nevada to San Bernardino Mountains and Hot Springs Valley in San Diego County).

NAMES IN USE

Bigleaf Maple (Oreg., Calif.).
Broad-leaved Maple (central Calif., Oreg.—Willamette Valley).
Oregon Maple (Oreg., Wash., and hort.).
White Maple (Oreg., Wash.).
Maple (Calif.).

[10] Long known only as a slender shrub from 8 to 12 feet in height. R M. Harper has, however, found it as a tree over 25 feet in height in Georgia (Floyd County) and in Alabama (Mountgomery County), so that it can now be added to our arboresent flora.

Acer circinatum Pursh. **Vine Maple.**

RANGE.—From the coast region of British Columbia south through Washington, Oregon, and California (to Mendocino County and upper Sacramento River).

NAMES IN USE

Vine Maple (central and northern Calif., Oregon—Willamette Valley).
Mountain Maple.

Acer glabrum Torrey.[11] **Dwarf Maple.**

RANGE.—California (Siskiyou Mountains and Sierras to the East Fork of the Kaweah River in Kern County at high elevations); from Montana to Wyoming, Colorado, Utah, Nevada, northern and southern Arizona (Santa Catalina and Chiricahua Mountains) and New Mexico (Sacramento Mountains); extending also into northwestern Nebraska and southwestern South Dakota (Black Hills, Sioux County).

NAMES IN USE

Dwarf Maple (Oreg., Utah, Calif., Colo.).
Mountain Maple (Colo., Mont.).
Soft Maple (Utah).
Shrubby Maple (Utah).
Bark Maple (Idaho).
Maple (Mont., Utah).
Rocky Mountain Maple (hort.).

Acer glabrum douglasii (Hooker) Dippel. **Dwarf Maple.**

RANGE.—Southern Alaska (upper end of Lynn Canal) in the coast region to Vancouver Island and western Washington and eastward to eastern Oregon (Blue Mountains), western Idaho and northern Montana; Wyoming (Natrona County).

Acer saccharum Marshall. **Sugar Maple.**

RANGE.—From southern Newfoundland and Nova Scotia (along the St. Lawrence and Saguenay Rivers, Lake St. John, and northern borders of Great Lakes) to Lake of the Woods, Ontario, Minnesota, northeastern South Dakota, Iowa, eastern Kansas, central and southeastern Oklahoma, southwestern Arkansas and eastern Louisiana; south (through the Northern States and on the Allegheny Mountains) to northern Georgia; west to eastern Nebraska, eastern Kansas, and eastern Texas.

NAMES IN USE

Sugar Maple (Me., N. H., Vt., Mass., R. I., Conn., N. Y., N. J., Pa., Del., Va., W. Va., N. C., S. C., Ala., La., Ky., Mo., Ohio, Ill., Ind., Iowa, Kans., Nebr., Mich., Minn., Wis., Ont.).
Hard Maple (Vt., R. I., N. Y., N. J., Pa., Va., Ala., Ky., N. C., Mo., Kans., Nebr., Ill., Ind., Iowa, Mich., Ohio, Minn., Ont., trade).
Sugar-tree (Me., Vt., R. I., Pa., Va., N. C., W. Va., Ala., Miss., La., Ark., Ky., Mo., Ill., Ind., Ohio, Kans.).
Rock Maple (Me., Vt., N. H., Conn., Mass., R. I., N. Y., Tenn., Ill., Mich., Iowa, Kans., Wis., Minn., Ont.).
Black Maple (Ky., W. Va., N. C.).
Sweet Maple (Ky.).
Maple (W. Va., S. C., trade).
Sugar (W. Va.).
White Maple (trade).
Rough Maple.

[11] As here understood this variable species is made to include several different forms, as shown by variations in the size and form of the leaves and fruit, which have been treated by some authors as distinct species. From a study of herbarium specimens alone, even of a large number, it is not difficult to be convinced that some of these forms are specifically distinct. A long and careful field study of these forms has, however, led the author to believe that they are not specifically nor varietally distinct. *Acer tripartitum* Nuttall, *Acer Modocense* Greene, *Acer subserratum* Greene, and four other species similarly described by E. L. Greene, are here referred to *Acer glabrum* Torrey.

Acer saccharum rugelii (Pax) Rehder. **Sugar Maple.**

RANGE.—As now known rather local in its occurrence, in general being found from southeastern Ohio to western Pennsylvania, southern Ontario, eastern Tennessee, Michigan, Illinois, Indiana, eastern Missouri, and northwestern Arkansas.

NAME IN USE

Sugar Maple

Acer saccharum schneckii Rehder.[12] **Sugar Maple.**

RANGE.—Southern Illinois and Indiana to Kentucky, eastern Tennessee, and northern Georgia.

NAME IN USE

Sugar Maple

Acer saccharum glaucum Sargent.[13] **Sugar Maple.**

RANGE.—To be looked for generally within range of *Acer saccharum* Marshall. It is now known to occur from Isle-aux-Couvres in the St. Lawrence River, Prince Edward Island, Nova Scotia, Lake St. John and Queen Ann's, Quebec to Iowa and south to New York, Ohio, central Tennessee, western Pennsylvania, South Carolina, Alabama, Mississippi, Louisiana, southeastern Oklahoma, and southern Arkansas.

NAME IN USE

Sugar Maple

Acer saccharum sinuosum (Rehder) Sargent.[14] **Sugar Maple.**

RANGE.—Western Texas (border of Cibolo Creek in vicinity of Boerne, Kendall County; also in Bandera County on upper Seco Creek, and in Uvalde County, near Utopia).

NOTE ON NOMENCLATURE.—Formerly designated as *Acer sinuosum* Rehder.

***Acer nigrum** F. A. Michaux. **Black Maple.**

RANGE.—From Quebec (valley of St. Lawrence River, vicinity of Montreal) to New Hampshire (Cheshire County), western Vermont, Massachusetts, northwestern Connecticut, ranging westward in northern and western New York, southern Ontario, Ohio, southern Michigan, Indiana, Illinois, and Iowa, to northeastern South Dakota (Roberts County), central-western Missouri (Jackson County), eastern Kansas (Lawrence County); southward it extends through western Pennsylvania to West Virginia and Kentucky.

NOTE ON NOMENCLATURE.—Formerly designated as *Acer saccharum nigrum* (Michaux fils) Britton, and as *Acer barbatum* var. *nigrum* Sargent.

NAMES IN USE

Black Sugar Maple (Mich., Mo.).
Black Maple (Mich., Iowa).
Hard Maple (Minn., trade).
"White Maple."

Acer nigrum palmeri Sargent. **Black Maple.**

RANGE.—Illinois (Johnson County—Tunnel Hill); southern Indiana; Missouri (Clark, Jackson, and Dunklin County).

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[12] In its densely woolly leaves and leaf stems this variety comes near to *Acer floridanum* Pax, but in its large-sized leaves relationship to *Acer saccharum* Marshall is suggested, to which it is gradually connected by intermediate forms (Rehder).

[13] C. S. Sargent in Bot. Gaz., LXVII, 233, 1919. First described in 1886 as a varietal form of the Sugar Maple under the name *Acer saccharinum* var. *glaucum* Pax, which in 1902 was made a synonym (in part) of *Acer saccharum* var. *Rugelii* Rehder. Previously it was generally considered a form only of *Acer saccharum* Marshall.

[14] Similar in general appearance to *Acer grandidentatum* Nuttall, *Acer mexicanum* Gray (a Mexican species), and *Acer floridanum* Pax, but closely related to the latter species.

NAME IN USE

Black Maple

VARIETY DISTINGUISHED IN CULTIVATION

Acer nigrum monumentale (Temple) Sudworth.

Acer leucoderme Small. **Whitebark Maple.**

RANGE.—North Carolina (Stanley County) and southeastern Tennessee to northern Georgia, northern and central Alabama; western Louisiana and southern Arkansas.

NAMES IN USE

Sugar Maple (lit.).
Whitebark Maple.
Pale-bark Maple (lit.).
Chalk Maple (lit.).

Acer floridanum (Chapman) Pax.[15] **Southern Sugar Maple.**

RANGE.—From southeastern Virginia (Dinwiddie County, near McKinney)[16] and northeastern North Carolina (Halifax County, near Weldon, and also in vicinity of Raleigh),[16] and southward to Georgia and western Florida (River Junction, Gadsden County and Lafayette County); westward to Louisiana, southern Arkansas, and eastern Texas.

NAMES IN USE

Florida Maple.
Southern Sugar Maple.

Acer floridanum villipes Rehder.[17] **Southern Sugar Maple.**

RANGE.—North Carolina (vicinity of Raleigh and planted in streets of Raleigh); South Carolina (Calhoun Falls); Georgia (Columbus, Muscogee County, and Waynesborough, Burke County; also at Cuthbert, near Milledgeville, and on Shell Bluff on the Savannah River below Augusta); Florida (River Junction); southern New Mexico (San Luis Mountains).[18]

NAME IN USE

Southern Sugar Maple

Acer grandidentatum Nuttall. **Bigtooth Maple.**

RANGE.—Northern Montana (headwaters of Columbia River); southeastern Idaho (Oneida County); Utah (Wasatch Mountains); western Wyoming (Salt River Mountains); southern Arizona (Huachuaca, Santa Catalina, and Chiricahua Mountains and others); New Mexico (Mogollon Mountains); western Texas (Guadaloupe, Davis, and Chisos Mountains); southwestern Oklahoma (Wichita Mountains); Mexico (mountains of Coahuila).

NOTE ON NOMENCLATURE.—Formerly designated as *Acer saccharum grandidentatum* (Nuttall) Sudworth.

NAMES IN USE

Western Sugar Maple.
Hard Maple (Utah).
Large-toothed Maple.
Sugar Maple (lit.).
Maple (Utah).
Big-tooth Maple.

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[15] First described in 1860 as *Acer saccharinum* Wang. var. *Floridanum* Chapman; in 1886, as *Acer floridanum* (Chapman) Pax; in 1891, as *Acer barbatum* var. *Floridanum* Sargent; and in 1892, as *Acer saccharum* var. *Floridanum* Small and Heller.

[16] W. W. Ashe.

[17] In Sargent, Trees and Shrubs, II, 255, 1913, first described in 1913, under its present name, by Rehder from Columbus, Georgia, while it was first described from New Mexico in 1915 as *Acer brachypterum* Wooten and Stanley. "*Acer floridanum* var. *villipes* Rehd." (Sargent, Man. Trees N. A., 2d ed., 691, 1922)

[18] C. S. Sargent.

*Acer saccharinum Linnæus. **Silver Maple.**

RANGE.—From New Brunswick (St. Johns River) to western Florida; west to southern Ontario, through southern Michigan to southeastern South Dakota, eastern Nebraska, Kansas (Blue River), eastern Oklahoma, southwestern Arkansas, and western Louisiana.

NOTE ON NOMENCLATURE.—Formerly designated as *Acer dasycarpum* Ehrhart.

NAMES IN USE

Silver Maple (Me., Vt., Mass., R. I., N. Y., N. J., Pa., Del., Md., Va., W. Va., N. C., S. C., Fla., Miss., Ky., Ohio, Ill., Ind., Mo., Kans., Nebr., Iowa, Mich., Minn., S. Dak.).
Soft Maple (Vt., N. H., Mass., R. I., N. Y., N. J., Pa., W. Va., Ala., Miss., La., Tex., Mo., Ohio, Mich., Ontario, Ill., Ind., Kans., Nebr., Iowa, Wis., Minn., S. Dak., trade).
River Maple (Me., N. H., R. I., W. Va., Minn.).
White Maple (Me., Vt., R. I., N. Y., N. J., Pa., W. Va., N. C., S. C., Ga., Fla., Ala., Miss., La., Ky., Mo., Ill., Ind., Kans., Nebr., Minn.).
Silver-leaved Maple (Del., N. J.).
Water Maple (Pa., W. Va.).
Creek Maple (W. Va.).
Swamp Maple (W. Va., Md.).

VARIETIES DISTINGUISHED IN CULTIVATION

Acer saccharinum pendulum (Nicholson) Sudworth. **Weeping Silver Maple.**
Acer saccharinum aureo-variegatum (Nicholson) Sudworth. **Variegated Silver Maple.**
Acer saccharinum wierii (Pax) Sudworth. **Cutleaf Silver Maple.**
Acer saccharinum dissectifolium Sudworth.
Acer saccharinum lutescens (Pax) Sudworth.
Acer saccharinum novum (Ellwanger and Barry) Sudworth. **Curly-leaf Silver Maple.**

*Acer rubrum Linnæus.[19] **Red Maple.**

RANGE.—From Newfoundland to southern Florida (vicinity Fort Lauderdale) and westward to western Wisconsin, northwestern Minnesota, southeastern Iowa, eastern Oklahoma, southwestern Oklahoma, southwestern Arkansas, and eastern Texas (vicinity of Houston, Harris County).

NAMES IN USE

Red Maple (Me., N. H., Vt., Mass., R. I., Conn., N. Y., N. J., Pa., Del., Md., Va., W. Va., N. C., S. C., Ga., Fla., Ala., Miss., La., Tex., Ky., Mo., Ill., Ind., Ohio, Ont., Iowa, Wis., Nebr.).
Swamp Maple (Vt., N. H., Mass., Conn., R. I., N. Y., N. J., Pa., Del., N. C., S. C., Fla., Ala., Miss., La., Tex., Mo., Ind., Ont., Minn.).
Soft Maple (Vt., Mass., N. Y., Va., Miss., Mo., Ill., Ind., Ohio, Ont., Mich., Kans., Nebr., Minn., trade).
Water Maple (Miss., La., Tex., Ky., Mo.).
White Maple (Me., N. H., W. Va.)
Shoe-peg Maple (W. Va.).
Erable (La.).
Ah-weh-hot-kwah="Red Flower" (Onondaga Indians, N. Y.).
Scarlet Maple (Tex.).
Maple (N. C.).

VARIETY DISTINGUISHED IN CULTIVATION

Acer rubrum sanguineum (Spach) Pax.

[19] *Acer stenocarpum* Britton and Shafer (North Am. Trees, 647, fig. 598, 1908) was described as a distinct species, which is represented by small trees growing in flinty soil at Alenton, Missouri. The unusual soil conditions under which these trees are growing may possibly account for the narrow-winged samarae, relied upon chiefly to distinguish this plant from *Acer rubrum* Linnæus; in other respects it appears to be a form only of the Red Maple. The flowers of *Acer rubrum* Linnæus are some times brilliant red and some times yellowish, and from the latter characteristic *Acer rubrum* var. *pallidiflorum* Pax was described.

Acer rubrum drummondii (Hooker and Arnott) Sargent.[20] **Red Maple.**

RANGE.—Southern Illinois and Indiana, western Kentucky and Tennessee to southeastern Missouri, Arkansas, eastern Texas, eastern Louisiana, and western Mississippi.

NAMES IN USE

Drummond Maple (lit.).
Drummond Red Maple (lit.).
Red Maple.

Acer rubrum tomentosum Kirchner. **Red Maple.**

RANGE.—North Carolina (Biltmore); Georgia (vicinity of Augusta; also in Altamaha River swamp, Liberty County); Florida—J. K. Small; Alabama (Flagstaff Mountain, Barclay; also at Mount Vernon, Mobile County—Chas Mohr); Mississippi (Panther Burn, Sharkey County); Texas (Larissa, Cherokee County); Oklahoma (near Page, Leflore County); Arkansas (near Little Rock).

NOTE ON NOMENCLATURE.—As regards its range in Georgia and Florida, this variety seems to have been included as a form of *Acer drummondii* Small (not Hooker and Arnott). It was first described in 1886 as *Acer rubrum* var. *tomentosum* Pax.[21]

NAME IN USE

Red Maple

Acer rubrum tridens Wood.[22] **Red Maple.**

RANGE.—Not fully determined, but to be looked for within the range of the species. Reported to occur from Massachusetts to Florida and westward to southern Michigan (Cass County), Missouri, southeastern Oklahoma, and southwestern Arkansas, northern Louisiana, and eastern Texas (Harden and Cherokee Counties).

NAMES IN USE

Swamp Maple (N. C.).
Red Maple (lit.).
Three-toothed Red Maple (lit.).

***Acer negundo** Linnæus. **Boxelder.**

RANGE.—From central New York and western New England, southward to central Florida; westward to Minnesota, Iowa, eastern Kansas, Missouri, southeastern Oklahoma, and southwestern Arkansas (Big Creek), northern Alabama, western Louisiana, and eastern Texas.[23]

NAMES IN USE

Boxelder (Vt., Mass., R. I., Del., N. Y., N. J., Pa., Va., W. Va., N. C., S. C., Ala., Fla., Miss., La., Tex., Ark., Mo., Ill., Ind., Wis., Ohio, Mich., Iowa, Kans., Nebr., Minn.).
Ash-leaved Maple (R. I., Mass., N. J., Pa., Del., Va., S. C., La., Tex., Ill., Wis., Iowa, Ont., Kans., Nebr., Mich., Minn.).
Negundo Maple (Ill.).
Red River Maple.
Three-leaved Maple (Pa.).
Black Ash (Tenn.).
Stinking Ash (S. C.).
Sugar Ash (Fla.).
Cut-leaved Maple.
Maple-ash.

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[20] A well-marked form of this variety with three-lobed leaves rounded at the base has been characterized as *Acer rubrum drummondii*, forma *rotundatum* Sargent, which occurs in the central-western border region of Louisiana (Natchitoches Parish); and in the southeastern border region (St. Tammany Parish); also in southeastern Texas (Jefferson County) and in southeastern Missouri (Butler County).

[21] C. S. Sargent, Bot. Gaz., LVII, 236, 1919.

[22] Torrey and Gray (Flor, N. A., I, 249, 1838) first referred to this variety as *Acer rubrum* β, without definitely naming it. It was distinguished for the first time as *Acer rubrum* var. *tridens* Wood (Class-Book of Bot., 286, 1860), a name, however, which appears to have been generally neglected until 1902, when C. S. Sargent (Silva N., XIII, II, 1902) revived it. In 1908, Britton and Shafer (North Am. Trees, 648, 1908) adopted for it the name *Acer carolinianum* Walter (published in 1788), which, although certainly applied to a form of *Acer rubrum* Linnæus, does not, in the writer's opinion, clearly refer to this variety.

[23] The Boxelder is possibly native along the St. Lawrence River (near Montreal) and in eastern Ontario, but it now seems probable that through planting it has become naturalized in that region. Formerly the natural range assigned the Boxelder extended somewhat farther north and very much farther west. In the meantime also attempts have been made to separate extreme forms of this widely distributed and variable tree into distinct species. The difficulty, however, of doing this successfully appears when the many apparently connecting forms are carefully considered. It seems to the writer far more advisable to recognize the eastern forms of Boxelder as typical *Acer negundo* and to treat the several extreme forms as varieties.

Acer negundo violaceum Kirchner.[24] **Boxelder.**

RANGE.—From western Massachusetts it ranges through New York to Ohio, northern Wisconsin, Minnesota, Iowa, South Dakota, North Dakota (Golden Valley County), Idaho (Nez Perce County), occurring also in Missouri.

NAME IN USE

Boxelder

Acer negundo texanum Pax.[25] **Boxelder.**

RANGE.—Southwestern and western Missouri (Jackson County), southeastern Kansas, throughout Arkansas and western Oklahoma to southeastern Texas (San Antonio River).

NAME IN USE

Boxelder

Acer negundo interius (Britton) Sargent.[26] **Boxelder.**

RANGE.—From Manitoba, Saskatchewan, and Alberta southward in Montana, Wyoming, Colorado, Utah, New Mexico, and Arizona (Santa Catalina, Santa Rita, Huachuca, and Chiricahua Mountains).

NAMES IN USE

Rocky Mountain Boxelder. Boxelder.

Acer negundo arizonicum Sargent. **Boxelder.**

RANGE.—New Mexico (Socorro County, at Glenwood, 7 miles south of Alma, and at the Kelley Ranch, 7 miles north of Alma); Arizona (east side of Chiricahua Mountains, in Cave Creek Canyon; Coconino County, in Oak Creek Canyon; in Sycamore Canyon, near Flagstaff; Mount Kellogg, in Santa Catalina Mountains).

NOTE ON NOMENCLATURE.—Not previously differentiated from the species.

NAME IN USE

Boxelder

Acer negundo californicum (Torrey & Gray) Sargent.[27] **California Boxelder.**

RANGE.—California (from the lower Sacramento River to San Bernardino County).

NAMES IN USE

California Boxelder (lit.).
Boxelder (Calif.).
Maple (Calif.).
False Maple (Calif.).
Cut-leaf Maple (Calif.).

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[24] Formerly included as a form only of the species. Originally described under its present name in 1864. In 1911 it was characterized as *Rulac Nuttallii* Nieuwland, and in 1913, as *Negundo Nuttallii* Rydberg.

[25] Originally described under its present name in 1886, but quite generally it was still held to be only a form of the species. In 1903, it was characterized as *Rulac Texana* (Pax) Small (Flor. S. E. U. S., 743, 1903), based on *Acer Texanum* Pax, and in 1913 it was named *Negundo Texanum* (Pax?) Rydberg, although in 1917 the latter author (*Flor.* Rky. Mts. and Adj. Pl., 553, 1917) appears to have abandoned this species. *Acer negundo* var. *latifolium* Pax (1890) has been characterized as a form of this variety under the name *Acer negundo* var. *Texanum* forma *latifolium* Sargent, which is said to occu rin eastern Texas, southern Arkansas, Louisiana, eastern Mississippi (Black River), Tennessee (near Nashville), North Carolina (Cataba River near Marion), Virginia, and southern Ohio.

[26] Not differentiated from the species until 1908, when it was described as *Acer interior* Britton (Britton and Shafer, North Am. Trees, 655, 1908). In 1911, it was named *Rulac interior* (Britton) Nieuwland, and in 1913, *Negundo interius* (Britton) Rydberg. C. S. Sargent (Bot. Gaz., LXVII, 239, 1919) doubtfully refers *Acer Kingii* Britton (Opus cit., 656), based on specimens collected in the Wasatch Mountain, Utah, in August, 1869, to *Acer negundo interior* Sargent, and it seems probable that this view is correct.

[27] Originally described in 1838 as *Negundo Californicum* Torrey & Gray, and in 1840, as *Acer Californicum* Dietrich, a name now used by some authors. In 1889 it was named *Negundo aceroides* var. *Californicum* Sargent, and in 1891, *Acer Negundo* var. *Californicum* Sargent, while *Rulac californicum* (Torrey & Gray) Nieuwland was applied to it in 1911.

Family HIPPOCASTANACEÆ

AESCULUS Linnæus [28]

Aesculus glabra Willdenow. **Ohio Buckeye.**

RANGE.—From Pennsylvania (western slopes Allegheny Mountains) to northern Alabama (Tennessee River Valley and mountains) and west to southern Iowa, northeastern Kansas, Missouri, and southeastern Nebraska.

NAMES IN USE

Ohio Buckeye (Ga., Ark., Mo., Ohio).
Buckeye (Pa., Ky., Mo., Ill., Ind., Ohio, Iowa, Kans.).
Fetid Buckeye (W. Va.).
Stinking Buckeye (Ala., Ark.).
American Horse Chestnut (Pa.).
Smooth Buckeye (lit.).

Aesculus glabra pallida Kirchner. **Ohio Buckeye.**

RANGE.—Iowa (Warren and Boone Counties); Missouri (Marion, Stone, and Barry Counties); Arkansas (Washington County).

NAME IN USE

Ohio Buckeye

Aesculus glabra buckleyi Sargent. **Ohio Buckeye.**

RANGE.—Missouri (near Courtney, Jackson County); Kansas (vicinity of Manhattan); Mississippi; Ohio.

NAMES IN USE

Ohio Buckeye.
Sevenleaf Buckeye (lit.).

Aesculus glabra leucodermis Sargent. **Ohio Buckeye.**

RANGE.—Eastern Texas and Oklahoma; Arkansas; southern Missouri.

NAMES IN USE

Whitebark Buckeye (lit.).
Ohio Buckeye.

× **Aesculus mississippiensis** Sargent. **Hybrid.**

RANGE.—Mississippi (vicinity of Brookville, Noxubee County).

NOTE ON NOMENCLATURE.—Supposed to be a hybrid between *Aesculus glabra* Willdenow and *Aesculus pavia* Linnæus.

× **Aesculus arnoldiana** Sargent. **Hybrid.**

RANGE.—Originated in cultivation in the Arnold Arboretum, where it is represented by a single tree.

NOTE ON NOMENCLATURE.—Supposed to be a hybrid between *Aesculus glabra* Willdenow and *Aesculus hybrida* de Candolle.

Aesculus neglecta Lindley.

RANGE.—Originally described in 1826 from a tree, growing in the garden of the London Horticultural Society, Chiswick, England, which had been purchased from Monsieur Catros, Bordeaux, France, under the name "*Aesculus ohioenis.*" Two trees, planted over 100 years ago, now growing at Eleutherean Mills (about 4 miles from Wilmington), Del., are supposed to be from seeds gathered, some

[28] Britton and Shafer (North Am. Trees, 658, 1908) have admitted the Horse Chestnut (*Aesculus hippocastanum* Linnæus), a native of Asia, as naturalized in eastern United States, where it has been long and extensively cultivated for shade and ornament. This is an interesting fact, although the writer has not yet observed the tree growing spontaneously.

time after 1820, by a relation, by marriage, of the famous Du Pont family during a horseback journey from New Orleans to Delaware via Mississippi, Alabama, and Georgia. These trees are now believed to correspond with the description under *Aesculus neglecta* Lindley. In 1900 W. W. Ashe collected specimens of a buckeye near Saxapohaw, Alamance County, and in 1904 from a tree near Williamsville, Dunham County, N. C., which, together with specimens obtained in 1915 of a buckeye on the Hillsboro road (near Chapel Hill), N. C., are believed to be *Aesculus neglecta* Lindley (Sargent). These specimens and the Eleutherean Mills trees comprise all that is now known of this species. Further field investigations will doubtless extend its natural range.

Aesculus neglecta georgiana Sargent. Georgia Buckeye.

RANGE.—Central North Carolina (Durham and Orange Counties) to central Georgia (Richmond County); northern Alabama (Madison, Etowah, and Tuscaloosa Counties); Florida (vicinity of Pensacola, Escambia County).

NOTE ON NOMENCLATURE.—Formerly designated as *Aesculus georgiana* Sargent.

NAME IN USE

Georgia Buckeye

Aesculus neglecta pubescens Sargent. Georgia Buckeye.

RANGE.—North Carolina (Orange and Wake Counties) and southward to Georgia (Stone Mountain, region west of Augusta, and in Rabun, Richmond, DeKalb, and Floyd Counties); northern Alabama (Etowah County).

NOTE ON NOMENCLATURE.—Formerly designated as *Aesculus georgiana pubescens* Sargent.

NAME IN USE

Georgia Buckeye

Aesculus neglecta tomentosa Sargent.

RANGE.—South Carolina (Oconee County).

NOTE ON NOMENCLATURE.—Long known in cultivation as *Aesculus Michauxii* Hort., not of Spach, *Aesculus humilis* Hort., not of Lindley, *Pavia discolor* in Herbarium Kew Arboretum, not of Pursh, *Pavia rubra* in Herbarium Kew Arboretum, *Aesculus rubra carnea superba* Hort. Ellwanger and Barry, and *Aesculus rubra carnea pubescens* Hort. Ellwanger and Barry.

DISTINGUISHED IN CULTIVATION

× Aesculus dupontii Sargent. Hybrid.

RANGE.—Delaware (Eleutherean Mills, in the neighborhood of Wilmington).

NOTE ON NOMENCLATURE.—Supposed to be a hybrid between *Aesculus neglecta* Lindley and *Aesculus pavia* Linnæus. The single tree known is believed to have come from seed gathered with that which produced two trees of *Aesculus neglecta* Lindley now growing at Eleutherean Mills.

× Aesculus mutabilis (Spach) Scheel. Hybrid.

RANGE.—Massachusetts (cultivated trees in Arnold Arboretum, Jamaica Plain, near Boston).

NOTE ON NOMENCLATURE.—Supposed to be a hybrid between *Aesculus discolor mollis* Sargent and *Aesculus neglecta georgiana* Sargent. These plants originally came from a nursery in Germany.

× Aesculus mutabilis penduliflora Sargent. Hybrid.

RANGE.—Known only in cultivation (Arnold Arboretum, Jamaica Plain, Massachusetts; Spaeth nursery, near Berlin, Germany, under the designation *Aesculus humilis* × *lutea*).

NOTE ON NOMENCLATURE.—Supposed to be a hybrid between *Aesculus discolor mollis* Sargent and *Aesculus neglecta* Lindley.

× Aesculus mutabilis induta Sargent. **Hybrid.**

RANGE.—Known only in cultivation (Arnold Arboretum, Jamaica Plain, Mass.; the plants were originally received from the Hesse Nursery at Weener, Germany).

NOTE ON NOMENCLATURE.—Supposed to be a hybrid between *Aesculus discolor mollis* Sargent and *Aesculus neglecta* Lindley.

Aesculus neglecta lanceolata Sargent. **Georgia Buckeye.**

RANGE.—Northeastern Georgia (Rabun County).

NOTE ON NOMENCLATURE.—Formerly designated as *Aesculus georgiana lanceolata* Sargent.

NAME IN USE

Georgia Buckeye

Aesculus pavia Linnæus. **Red Buckeye.**

RANGE.—From southeastern Virginia to Florida (Dixie County) and westward to southern Kentucky and in the Gulf States to eastern Louisiana. Formerly known only as a shrub.

NAMES IN USE

Red-flowered Buckeye (lit.). Red Buckeye.

***Aesculus octandra** Marshall. **Yellow Buckeye.**

RANGE.—From Pennsylvania (Allegheny County) and along the Allegheny Mountains to eastern Tennessee, Georgia (Augusta), and northern Alabama (mountains); westward to Ohio, southern Indiana, and Illinois.

NOTE ON NOMENCLATURE.—Formerly designated as *Aesculus flava* Aiton.

NAMES IN USE

Buckeye (N. C., S. C., Ala., Ky., trade).
Sweet Buckeye (W. Va., Ind.).
Yellow Buckeye (N. C., S. C., Ala.).
Large Buckeye (Tenn.).
Big Buckeye (Tenn.).
Ohio Buckeye (Pa., cult.).

Aesculus octandra vesita Sargent. **Yellow Buckeye.**

RANGE.—Widely distributed with the species, appearing to be more abundant in the western part of the range.

NAME IN USE

Yellow Buckeye

Aesculus octandra virginica Sargent. **Yellow Buckeye.**

RANGE.—West Virginia (vicinity of White Sulphur Springs, Green Briar County). To be looked for elsewhere in the range of the species.

NAME IN USE

Yellow Buckeye

Aesculus discolor Pursh. **Woolly Buckeye.**

RANGE.—Georgia (Burke County); Alabama (Jefferson and Dallas Counties); Missouri (Dunklin County); eastern Texas (Comal and Wilson Counties). Very local in its distribution and formerly not recognized as a tree.

NAME IN USE

Woolly Buckeye

Aesculus discolor mollis (Rafinesque) Sargent. **Scarlet Buckeye.**

RANGE.—From North Carolina (vicinity of Wilmington) through Georgia to central Alabama and western Florida; westward in the Gulf States to the Guadalupe River, Texas; also from Arkansas to southern Missouri and southwestern Tennessee.

NOTE ON NOMENCLATURE.—Formerly designated as *Aesculus flava* Aiton var. *purpurascens* Gray and as *Aesculus octandra hybrida* (de Candolle) Sargent.

NAME IN USE

Scarlet Buckeye

× **Aesculus bushii** C. K. Schneider. **Hybrid.**

RANGE.—Southwestern Arkansas (near Fulton, McNab, Hempstead County).[29]

Aesculus austrina Small. **Scarlet Buckeye.**

RANGE.—From western Tennessee (vicinity of Memphis) and southern Missouri (Butler County) to eastern Texas (Guadalupe River, and in Brazoria and Kendall Counties); probably also in Louisiana and in northwestern Alabama.[30]

NOTE ON NOMENCLATURE.—Professor Sargent includes this tree under *Aesculus discolor* var. *mollis* Sargent (Man. Trees N. A., 2d ed., 709, 1922).

NAMES IN USE

Southern Buckeye. Scarlet Buckeye.

Aesculus californica (Spach) Nuttall. **California Buckeye.**

RANGE.—California (from Sacramento River in Mendocino County along coast ranges to San Luis Obispo County; western foothills of the Sierra Nevada to the northern slopes of Tejon Pass in Kern County; Antelope Valley of San Gabriel Mountains in Los Angeles County).

NAMES IN USE

California Buckeye (Calif.). Buckeye (lit.).
Horse Chestnut (Calif.).

TALISIA Aublet

Talisia pedicellaris Radlkofer.

RANGE.—Native of northern South America. Established on hammock near Miami, Fla. (J. K. Small).

Family SAPINDACEÆ

SAPINDUS Linnæus

Sapindus saponaria Linnæus. **Wingleaf Soapberry.**

RANGE.—Southern Florida (Cape Sable, shores and islands of Caximbas and Biscayne Bays) and Keys (Key Largo and Elliotts Key); West Indies to Venezuela and Ecuador; Mexico and Lower California.

NAMES IN USE

False Dogwood (Fla.). Southern Soapberry (lit.).
Soapberry (Fla.). West Indian Soapberry (lit.).
Bastard Dogwood (lit.). Wingleaf Soapberry.

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[29] The several trees found at this station by B. F. Bush and C. S. Sargent in 1901, and by Mr. Bush in 1902, probably have since been destroyed, as they can not be located now. C. S. Sargent states (Trees and Shrubs, II, 268, 1913) that possibly the tree raised from seed of these wild trees and now growing in the Arnold Arboretum, Jamaica Plain, Mass., is the only representative in existence. Believed to be a hybrid between *Aesculus discolor mollis* (Rafinesque) Sargent and *Aesculus glabra leucodermis* Sargent

[30] Proof of its occurrence in Alabama is a specimen collected in 1854 in Lawrence County and preserved in the Gray Herbarium (fide C. S. Sargent).

Sapindus marginatus Willdenow.[31] **Soapberry.**

RANGE.—Georgia (Hurricane Island in Midway River, fide C. S. Sargent) and Florida (coast region from St. Johns River and Cedar Keys southward); Cuba. Range still imperfectly known.

NAMES IN USE

Soapberry (Fla.).
Wild China (Fla.).
Chinaberry.
Florida Soapberry.

Sapindus drummondii Hooker and Arnott.[32] **Western Soapberry.**

RANGE.—Southwestern Missouri to eastern and southern Kansas, eastern Louisiana, southwestern Arkansas, southwestern and extreme western Oklahoma, eastern Texas (Edwards Plateau to the Rio Grande), southwestern Texas, southern New Mexico and Arizona; southern Colorado; northern Mexico.

NAMES IN USE

Wild China-tree (lit.).
Chinaberry (N. M.).
Wild China (La., Tex.).
Soapberry (La., Ark., Tex.).
Wild China Berry (Ariz.).
Western Soapberry (lit.).
Indian Soap-plant.

EXOTHEA Macfadyen

Exothea paniculata (Jussieu) Radlkofer. **Inkwood.**

RANGE.—Southern Florida (from Mosquito Inlet to the southern Keys); Santo Domingo, Bahamas, Cuba, Jamaica, Porto Rico, and Guatemala.

NAMES IN USE

Inkwood (Fla.).
Ironwood.
Butterbough.

HYPELATE P. Browne

Hypelate trifoliata Swartz. **White Ironwood.**

RANGE.—Florida Keys (Upper Metacumbe, Windleys, and Umbrella Keys).

NAME IN USE

White Ironwood (Fla.)

CUPANIA Linnæus

Cupania glabra Swartz.

RANGE.—Southern Florida (Big Pine Key, where it was discovered about 80 years ago by J. L. Blodgett. From then until 1921 it was not seen there or elsewhere in Florida. In 1921, however, J. K. Small rediscovered it on Big Pine Key); Cuba, Jamaica, Central America and northern South America.

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[31] Michaux is said to have found this tree in the Coast Region from South Carolina to Georgia, but it has not been observed there since, except as noted on Hurricane Island, Georgia. As formerly understood *Sapindus marginatus* Willdenow was confused with *Sapindus drummondii* Hooker and Arnott, a species which ranges west to the Mississippi River and beyond.

[32] Thomas Nuttall discovered this tree in 1819, and it was technically named and described about 1838, but until 1897 it appears to have been confused with the preceding species.

UNGNADIA Endlicher

Ungnadia speciosa Endlicher. **Spanish Buckeye.**

RANGE.—From eastern Texas (Brazos and Trinity Rivers) to New Mexico (Organ Mountains), and southward into Mexico (Sierra Madre in Nuevo Leon and mountains of Chihuahua).

NAMES IN USE

Spanish Buckeye (Tex.).
Texas Buckeye (Tex.).
New Mexican Buckeye (lit.).

DODONAEA Linnæus

Dodonaea microcarpa Small.

RANGE.—Florida (Long Pine Key).

Family RHAMNACEÆ

CONDALIA Cavanilles

Condalia obovata Hooker. **Bluewood.**

RANGE.—Western Texas (Matagorda Bay to the Rio Grande); northeastern Mexico.

NAMES IN USE

Bluewood (Tex.).
Logwood (Tex.).
Purple Haw (Tex.).

REYNOSIA Grisebach

Reynosia septentrionalis Urban. **Red Ironwood.**

RANGE.—Southern Florida (Marquesas Islands to Biscayne Bay); Bahamas.
NOTE ON NOMENCLATURE.—Formerly confused with *Reynosia latifolia* Grisebach, a Cuban species.

NAMES IN USE

Red Ironwood (Fla.).
Darling Plum (Fla.).

KRUGIODENDRON Urban

Krugiodendron ferreum (Vahl) Urban. **Black Ironwood.**

RANGE.—Southern Florida (coast from Cape Canaveral and Keys to Biscayne Bay); West Indies and Bahamas.
NOTE ON NOMENCLATURE.—Formerly designated as *Ramnidium ferreum* (Vahl) Sargent.

NAME IN USE

Black Ironwood (Fla.)

RHAMNUS Linnæus

Rhamnus crocea Nuttall.[33] **Hollyleaf Buckthorn.**

RANGE.—California (coast mountains from central to southern part of State).

NAMES IN USE

Hollyleaf Buckthorn (lit.).
Evergreen Buckthorn (lit.).

[33] Britton and Shafer (op. cit., 677) have adopted for this small evergreen tree the name *Rhamnus ilicifolia* Kellogg, believing that *Rhamnus crocea* Nuttall is a shrub. Although Nuttall characterizes the latter as "A much branched thorny shrub," I can not find but that otherwise his description fits the hollyleafed buckthorn, which is often shrubby, as well as sometimes a small tree.

Rhamnus crocea ilicifolia Greene. **Hollyleaf Buckthorn.**

RANGE.—California (Sacramento River southward on west slopes of Sierra Nevada and coast mountains to San Diego County); Arizona (Oak Creek and Sycamore Canyons; Verde River Canyon in vicinity of Camp Verde; Pinal and Santa Catalina Mountains).

NAME IN USE

Hollyleaf Buckthorn

Rhamnus crocea pilosa Trelease mss. in M. K. Curran. **Buckthorn.**

RANGE.—Southern California (Santa Maria Valley in the vicinity of San Diego).

NOTE ON NOMENCLATURE.—Designated by some authors as *Rhamnus crocea insularis* forma *pilosa* Trelease, and as *Rhamnus pilosa* (Trelease) Abrams.

NAME IN USE

Buckthorn

Rhamnus crocea insularis (Greene) Sargent.[34] **Buckthorn.**

RANGE.—Southern California (Cedros and Santa Barbara Islands and adjacent mainland).

NAME IN USE

Buckthorn

Rhamnus caroliniana Walter. **Yellow Buckthorn.**

RANGE.—From Virginia to Florida, and west to eastern Kansas, Oklahoma, southwestern Arkansas, and eastern Texas.

NAMES IN USE

Indian Cherry (W. Va., N. C., Miss., La., Tex., Ark., Nebr.).
Buckthorn (Ark., Iowa, Nebr., Ohio).
Alder Buckthorn (Tex., Nebr.).
Yellow-wood (Ala., Fla., La.).
Stinkwood (La.).
Bog Birch (Minn.).
Stink Berry (Nebr.).
Stink Cherry (Nebr.).
Carolina Buckthorn (S. C., Pa., Ohio).
Polecat-tree (Tex.).
Polecat-wood (Ark.).
Brittlewood (Ark.).
Elbow-brush (Ark., Miss.).
Yellow Buckthorn.

***Rhamnus purshiana** de Candolle. **Cascara.**

RANGE.—From Puget Sound southward to central California; eastward through northern Washington to Idaho (Bitter Root Mountains) and Montana (Flat Head Lake); northeastern Oregon (Wallowa National Forest—J. D. Guthrie); Arizona (Grand Canyon of Colorado River; Chiricahua Mountains).

NAMES IN USE

Shittimwood (Oreg., Idaho, Wash.).
Cascara Sagrada (Calif., Oreg.).
Bearberry (Oreg., Calif., Idaho, Wash.).
Bearwood (Oreg.).
Cascara (Idaho).
Wahoo (Oreg.).
Chittim (Oreg.).
Chittern (Wash.).
Cascara Buckthorn (trade and hort.).
Yellow-wood (Oreg.).
Buckthorn (Idaho).
Pigeon-berry (Idaho).
Oregon Bearwood (Oreg., Wash.).
Coffee-berry (Calif.).
Wild Coffee-bush (Calif.).
Bitterbark (lit.).
Western Coffee (Oreg., Calif.).
Bayberry (Oreg., Calif.).
Wild Coffee (Calif.).
California Coffee (Calif.).
Coffee-tree (lit.).

NOTE.—Two wild trees of *Rhamnus dahurica* Pallas," an Indian species, were reported growing in a swamp (5 or 6 miles) south of Ann Arbor, Mich., 500

[34] *Rhamnus pirifolia* Greene, occurring on Santa Cruz Island, off the coast of southern California, was formerly admitted to the Check List as a distinct species. Britton and Shafer (op. cit., 678) have also recorded it as such. The writer is in doubt now as to whether this plant is distinct from *Rhamnus crocea* Nuttall, or its variety *Rhamnus crocea insularis* (Greene) Sargent, to which it is certainly similar.

yards from any residence. A smaller cultivated tree of this species in that vicinity could not be the parent of the "wild trees," which were doubtless seeded by birds and from some older cultivated tree.—Torrey, vol. 19, 141–142, 1919.

CEANOTHUS Linnæus

Ceanothus arboreus Greene. **Island Myrtle.**

RANGE.—Islands off coast of southern California (Santa Catalina, Santa Cruz, Santa Rosa Islands).

NAME IN USE

Island Myrtle

Ceanothus thyrsiflorus Eschscholtz. **Blue Myrtle.**

RANGE.—Western California (from Mendocino County to San Luis Rey River).

NAMES IN USE

Blue Myrtle.
California Lilac (Calif.).
Wild Lilac (Calif.).
Blue Blossom (Calif.).

Ceanothus spinosus Nuttall. **Spiny Myrtle.**

RANGE.—Southern California (vicinity of the coast in Santa Barbara, Ventura, and Los Angeles Counties).

NAME IN USE

Spiny Myrtle

COLUBRINA Brongniart

Colubrina reclinata (L'Héritier) Brongniart. **Soldierwood.**

RANGE.—Southern Florida (Umbrella Key, north end of Key Largo, and islands south of Elliotts Key); Jamaica, San Lucia, St. Vincent, Cuba, St. Croix, Haiti, Virgin, and Bahama Islands.

NAMES IN USE

Naked-wood (Fla.).
Soldierwood (Fla.).

Colubrina cubensis Brongniart. **Naked-wood.**

RANGE.—Southern Florida (Keys, Dade County); Bahamas and Cuba.

NAME IN USE

Naked-wood

Colubrina arborescens (Miller) Sargent. **Naked-wood.**

RANGE.—Southern Florida (vicinity of Homestead, Dade County; also on Boca Chica Key, and on Key Largo; also at Flamingo, Monroe County); West Indies and Bahamas.

NOTE ON NOMENCLATURE.—Also designated as *Colubrina Colubrina* (Jacquin) Millspaugh.

NAMES IN USE

Naked-wood.
Wild-coffee.

Family TILIACEÆ

TILIA[35] Linnæus

***Tilia glabra** Ventenat.[36] **Basswood.**

RANGE.—New Brunswick to Lake Superior (eastern shores) and to Lake Winnipeg (southern shores) and Assiniboine River; south to Pennsylvania, Ohio, through Michigan, Indiana, and Illinois and eastern Nebraska to Missouri.

NAMES IN USE

Basswood (Me., N. H., Vt., R. I., Mass., Conn., N. Y., N. J., Del., Ill., Ind., Mich., Ohio, Nebr., trade).
American Linden (Me., N. H., R. I., N. Y., Pa., Del., Ohio, Ill., Nebr., and hort.).
Linn (Pa., Ill., Ind., Ohio, Mo., Nebr.).
Linden (Vt., R. I., Pa., Nebr.).
Limetree (R. I., Ill.).
Whitewood (Vt., Ontario).
Beetree (Vt.).
Wickup (Mass.).
Yellow Basswood (Ind.).
Lein (Ind.).
Bass Tree.
Linn Tree.
White Linn.
Black Limetree.
Spoonwood.
Whistle-wood.

Tilia porracea Ashe. **Basswood.**

RANGE.—Western Florida (Okaloosa County in vicinity of Hickory Head).

Tilia leucocarpa Ashe.[37] **Basswood.**

RANGE.—The range of this newly described species has not been fully determined. As now known, it occurs in central western Alabama (Dallas County, Hatcher's Creek, Berlin), central eastern and southwestern Louisiana (West Feliciana and Calcasieu Parishes), southwestern Mississippi (Adams and Hinds Counties); southern Arkansas (Hempstead County); eastern Texas (Brazos River).

NOTE ON NOMENCLATURE.—Formerly designated as *Tilia nuda* Sargent.

NAME IN USE

Basswood

Tilia leucocarpa glaucescens (Sargent) Sudworth. **Basswood.**

RANGE.—Central western Alabama (Dallas County, Alabama River, Berlin), central western and southwestern Louisiana (Lake Charles, Calcasieu Parish, and Natchitoches, Natchitoches Parish); southeastern Oklahoma (Le Flore County).

NOTE ON NOMENCLATURE.—Formerly designated as *Tilia nuda glaucescens* Sargent.

NAME IN USE

Basswood

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[35] The careful study of *Tilia* by C. S. Sargent (Bot. Gaz., LXVI, 421–438; 494–511, 1918) shows clearly that we have long lacked an adequate understanding of our native species of this genus. Perhaps the most distressing discovery made in this connection is the apparent necessity of discarding Linnæus' name *Tilia americana*, popularly one of our best-known trees, because it is impossible to determine to what linden this name was applied or, in fact, whether the name does not include several different species. The very grave doubt which Professor Sargent's studies of *Tilia* have raised regarding the correct status of *Tilia americana* Linnæus, as well as concerning other native species and varieties, would seem to make it necessary to accept the careful revision he proposes.

[36] The common northern basswood, for which the name *Tilia americana* Linnæus has long been supposed to be the correct designation.

[37] Formerly designated (in part) as *Tilia pubescens* var. *α Aitonii* Engler, and as *Tilia americana* var. *α densiflora* Engler (as regards range, Houston, Tex.), and apparently by some authors as *Tilia americana* (not of Linnæus). It is *Tilia nuda* Sargent.

Tilia leucocarpa brevipedunculata (Sargent) Sudworth. **Basswood.**

RANGE.—Central eastern border of Texas (San Augustine County, vicinity of San Augustine).

NOTE ON NOMENCLATURE.—Formerly designated as *Tilia nuda brevipedunculata* Sargent.

NAME IN USE

Basswood

Tilia venulosa Sargent.[38] **Basswood.**

RANGE.—Southwestern North Carolina (Henderson County, Hickory Nut Gap, in the Blue Ridge Mountains, and near Saluda, Polk County).

NAME IN USE

Basswood

Tilia venulosa multinervis Sargent. **Basswood.**

RANGE.—Southwestern North Carolina (Polk County, near Saluda). Known now only from a single tree discovered in 1907.

NAME IN USE

Basswood

Tilia littoralis Sargent. **Basswood.**

RANGE.—Southeastern Georgia (Liberty County, on Colonels Island in Dykes Creek). Known now only from this one locality, where it was first discovered in 1915.

NAME IN USE

Basswood

Tilia littoralis discolor Sargent. **Basswood.**

RANGE.—Southeastern Georgia (Liberty County, on Colonels Island).

NAME IN USE

Basswood

Tilia crenoserrata Sargent.[39] **Basswood.**

RANGE.—Southwestern Georgia (Dougherty County) to northeastern and central Florida (Seminole, Orange, Putnam, Alachua, Columbia, and Levi Counties).

NAME IN USE

Basswood

Tilia australis Small. **Basswood.**

RANGE.—Northeastern Alabama (Blount County).

NAMES IN USE

Southern Basswood (lit.). Basswood.

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[38] W. W. Ashe first detected this basswood in the Blue Ridge Mountains in 1906 (Biltmore Herbarium), and specimens of this species were sent to the Arnold Arboretum in 1915 (Ashe).

[39] Formerly designated (in part) as *Tilia Floridana* Sargent (Man. Trees N. A., 672, 1906), not Small.

Tilia floridana Small. **Basswood.**

RANGE.—From southwestern North Carolina (Polk County) to western Florida; westward to eastern Kentucky, through the Gulf States to eastern Texas (on the Edwards Plateau to Uvalde, Kerr, and Bandera Counties), Arkansas and eastern Oklahoma; northern Mexico.

NAME IN USE

Basswood

Tilia floridana alabamensis Ashe. **Basswood.**

RANGE.—Northeastern and western Florida (Putnam, Gadsden, Leon, and Jackson Counties); central Alabama (Dallas County); central western Mississippi (Hinds, Adams, and Rankin Counties); southern and west central Louisiana (Iberia, Natchitoches, and West Feliciana Parishes); southwestern Arkansas (Hempstead County); southeastern Texas (Harris, Livingston, and Anderson Counties).

NOTE ON NOMENCLATURE.—Formerly designated as *Tilia alabamensis* Ashe and as *Tilia floridana* var. *oblongifolia* Sargent.

NAME IN USE

Basswood

Tilia floridana hypoleuca Sargent. **Basswood.**

RANGE.—Southeastern Oklahoma and southwestern Arkansas (Rich Mountain); northwestern Arkansas (Pope Creek Mountains in Montgomery County, and on Pine Creek near Terry's Store in Johnson County; also in the vicinity of Clinton.—W. W. Ashe).

NOTE ON NOMENCLATURE.—Recently designated as *Tilia hypoleuca* Ashe. Probably this basswood should be made a variety of *Tilia glabra* Ventenat, to to which it is closely related.

Tilia cocksii Sargent. **Basswood.**

RANGE.—Known now only from southwestern Louisiana (Calcasieu Parish).

NAME IN USE

Basswood

Tilia neglecta Spach. **Basswood.**

RANGE.—From the vicinity of Montreal (Quebec) to the coast region of Massachusetts and New York; southward in the Middle Atlantic States to the Potomac River, and the Appalachians to the mountains of North Carolina; extending westward to Mississippi (vicinity of Iuka, Tishomingo County) and to northern Missouri.

NOTE ON NOMENCLATURE.—Formerly designated as *Tilia michauxii* Sargent (not Nuttall), *Tilia pubescens* Sargent, not Aiton, and of Gray's Manual, 6th ed. (as regards Long Island).

NAMES IN USE

Basswood. Gray Linden (lit.).

Tilia caroliniana Miller. **Basswood.**

RANGE.—As now known the range of this tree is very scattered, having been detected only in the following localities: Southern North Carolina (eastern and western border of New Hanover County) and southward (near the coast) to southeastern Georgia (Colonel's Island, Liberty County); southern Arkansas (Hempstead and Clark Counties) to western Louisiana; eastern Texas (to Kendall County).

NAME IN USE

Basswood

Tilia caroliniana rhoophila Sargent.[40] **Basswood.**

RANGE.—Southwestern Arkansas (Clark and Hempstead Counties) to western Louisiana (Jefferson Davis, and Calcasieu Parishes); eastern Texas (to Kerr County).

NAME IN USE

Basswood

Tilia texana Sargent. **Basswood.**

RANGE.—Southeastern Texas (Cherokee, Harris, Brazos, Kendall, and Kerr Counties).

NOTE ON NOMENCLATURE.—First described in 1909 as *Tilia pubescens* var. *β Ventenatii* Engler.

NAME IN USE

Basswood

Tilia phanera Sargent. **Basswood.**

RANGE.—Known now to occur at a single station in south central Texas (on Spring Creek near Boerne, Kendall County), where it was first discovered in 1917.

NAME IN USE

Basswood

Tilia phanera scabrida Sargent. **Basswood.**

RANGE.—Southeastern Texas (vicinity of Blanco, Blanco County, where it was first discovered in 1885); College Station, Brazos County; Velasco, Brazoria County).

NOTE ON NOMENCLATURE.—First described in 1909 (in part) as *Tilia pubescens* var. *α Aitonii* forma *gymnophylla* Engler, a designation which seems not to have been recognized by American authors.

NAME IN USE

Basswood

Tilia eburnea Ashe.[41] **Basswood.**

RANGE.—Southwestern North Carolina (east slope of Blue Ridge Mountains); northwestern South Carolina (Calhoun Falls, Abbeyville County) to Georgia (Burke County; Stone Mountain, Dekalb County); north-central border of Florida (Gadsden County).

NOTE ON NOMENCLATURE.—*Tilia eburnea lasioclada* (Sargent) Ashe, recently proposed, was previously designated as *Tilia lasioclada* Sargent.

NAME IN USE

Basswood

Tilia lata Ashe. **Basswood.**

RANGE.—Northwestern Alabama (Lawrence and Winston Counties, being common on the Brushy Fork of the Sipsey River).

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[40] In so far as it occurs in Texas this tree was formerly designated as *Tilia pubescens* Torrey and Gray, with reference to its occurrence in Louisiana and Texas as *Tilia pubescens* Sargent

[41] Bot. Gazette, XXXIII, 231, 1902.

***Tilia heterophylla** Ventenat.[42] **White Basswood.**

RANGE.—Southeastern Indiana (Switzerland and Jefferson Counties); southeastern West Virginia (vicinity of White Sulphur Springs, Greenbrier County); Piedmont section of North Carolina, South Carolina, and Georgia; south-central Alabama (vicinity of Selma and Berlin, Dallas County); western Florida (vicinity of Tallahassee, Leon County, River Junction, Gadsden County, and vicinity of Rock Cave, Jackson County).

NAMES IN USE

White Basswood (Ind., Ala.).
Wahoo (Ga., Fla.).
Wild Linden.
Smooth-fruited White-leaved Limetree (Tenn.).
Large-leaved Limetree.
Silverleaf Poplar (Ky.).
Lin.
Linn (N. C.).
Basswood (N. C., trade).
Beetree Linden.
Linden.
Bee-tree.
White Linn.

Tilia heterophylla michauxii (Nuttall) Sargent. **White Basswood.**

RANGE.—From Pennsylvania (valley of the Susquehanna River) to western and southern New York; thence through southern Ohio, Indiana, and Illinois to northeastern Missouri (vicinity of Ilasco, Ralls County), and northwestern Arkansas (vicinity of Eureka Springs, Carroll County, and of Cotter, Marion County); southward through eastern Kentucky and Tennessee to northern Mississippi, and along the Appalachian Mountains and foothills to northern and southern Georgia and to central Alabama (Dallas County).

NOTE ON NOMENCLATURE.—Formerly designated as *Tilia Michauxii* Nuttall.

NAME IN USE

White Basswood

Tilia heterophylla nivea Sargent. **White Basswood.**

RANGE.—Western Florida (vicinity of River Junction, Gadsden County).

NAME IN USE

White Basswood

Tilia heterophylla amphiloba Sargent. **White Basswood.**

RANGE.—Known now to occur only in western Florida (vicinity of River Junction, Gadsden County) and in northeastern Alabama (vicinity of Valley Head, Dekalb County).

NOTE ON NOMENCLATURE.—Probably the same as *Tilia apposita* Ashe, which antedates Sargent's varietal name by eighteen months.

NAME IN USE

White Basswood

Tilia monticola Sargent. **White Basswood.**

RANGE.—Southwestern North Carolina (vicinity of Highlands, Macon County, and of Biltmore, Buncombe County); northeastern Tennessee (vicinity of Johnson City, Washington County); southwestern Virginia (on Farmer Mountain, near New River, Carroll County).

NOTE ON NOMENCLATURE.—Formerly designated as *Tilia heterophylla* Sargent, in part, not of Ventenat. Further study may show this to be a form of *Tilia heterophylla michauxii* (Nuttall) Sargent. A basswood referred to the latter variety, and previously characterized as *Tilia tenera* Ashe (1917), is now designated as *Tilia heterophylla tenera* Ashe. It occurs near Deep River, Moore County, North Carolina.

NAME IN USE

White Basswood

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[42] The form of this tree found in West Virginia was first designated as *Tilia heterophylla* var. *microdonta* Engler. The first authentic specimen of the species was taken in North Carolina in 1892.

Tilia georgiana Sargent. **Basswood.**

RANGE.—Southern South Carolina (vicinity of Charleston); southeastern Georgia (Colonels Island, Liberty County, and vicinity of Brunswick, Glynn County) to central and western Florida (vicinity of Sumner, Levy County, Crawfordville, Wakulla County, Marianna, Jackson County, Tallahassee, Leon County, Lake City, Columbia County, Gainsville, Alachua County, and San Mateo, Putnam County); Arkansas (Hot Spring County—Palmer.

NOTE ON NOMENCLATURE.—Formerly designated as *Tilia pubescens* Ventenat (not of Aiton).

NAME IN USE

Basswood

Tilia georgiana crinita Sargent. **Basswood.**

RANGE.—Southern South Carolina (vicinity of Bluffton, Beaufort County, and of Charleston); southeastern Georgia (Colonels Island, Liberty County).

NOTE ON NOMENCLATURE.—Formerly designated as *Tilia pubescens* Sargent (as to the range in South Carolina, not of Aiton).

NAME IN USE

Basswood

Family MALVACEÆ

THESPESIA Solander

Thespesia populnea (Linnuæs) Solander. **Seaside Mahoe.**

RANGE.—Native in the Old World tropics and apparently naturalized through cultivation in the West Indies and sparingly in the southern Florida Keys.

NOTE ON NOMENCLATURE.—Originally described as *Hibiscus populnea* Linnæus.

NAMES IN USE

Poppy-tree, Poplar, Catappa (West Indies).
Portia-tree, Umbrella-tree, Tulip-tree (East Indies).
Seaside Mahoe.

HIBISCUS Linnæus

Hibiscus tiliaceus Linnæus.

RANGE.—Nativity uncertain; circumtropical in its distribution as now known. Southern Florida (coast region on offshore bars of Bay Biscayne, on shore hammocks of Everglade Keys and the Florida Keys. Fide J. K. Small).

NOTE ON NOMENCLATURE.—Designated also as *Paritium tiliaceum* Saint-Hilaire.

GOSSYPIUM Linnæus

Gossypium punctatum Schum. and Thonn.

RANGE.—Nativity uncertain; circumtropical in its distribution as now known. Southern Florida (hammocks of Florida Keys and of Cape Sable region—fide J. K. Small).

Family STERCULIACEÆ

FREMONTIA Torrey

Fremontia californica Torrey. **Mountain Leatherwood.**

RANGE.—California (from western foothills of Mount Shasta, Siskiyou County, to Lower California; Arizona (Bradshaw Mountains, Yavapai County—Wales).

NOTE ON NOMENCLATURE.—Formerly, and still, designated as *Fremontodendron californicum* Coville.

NAMES IN USE

Slippery Elm (Calif.).
Silver Oak (Calif.).
Leatherwood (Calif.).
Fremontia (Calif.).
Flannel Bush (Calif.).
California Slippery Elm (Calif.).
False Slippery Elm (Calif.).
Mountain Leatherwood (Calif.).

STERCULIA Linnæus

Sterculia platanifolia Linnæus. Chinese Parasol-tree.

RANGE.—Native of China and Japan. Widely planted for ornament in the South Atlantic (as far north as the District of Columbia), and Gulf States, and now growing spontaneously in several of the Gulf States.

NAMES IN USE

Parasol-tree.
Chinese Parasol-tree.

Family THEACEÆ

GORDONIA Ellis

Gordonia lasianthus (Linnæus) Ellis. Loblolly-bay.

RANGE.—Coast region from southern Virginia to Florida (Indian River and Cape Romano) and west in the Gulf Coast region to the Mississippi River; inland in Georgia to Augusta.

NAMES IN USE

Loblolly Bay (N. C., S. C., Ga., Ala., Fla., Miss., La.).
Tan Bay (Miss., Fla., La.).
Black Laurel (N. C.).
Bay (lit.).
Swamp Laurel.
Holly Bay.

FRANKLINIA Marshall

Franklinia alatamaha Marshall.[43] Franklinia.

RANGE.—At present known only in cultivation. Originally (1765) found growing wild in Georgia (near Fort Barrington on what is now known as the Altamaha River), but it has not been seen since 1790.

NOTE ON NOMENCLATURE.—Originally described as *Franklinia alatamaha* Marshall; later as *Gordonia pubescens* L'Héritier, *Gordonia Altamaha* (Marshall) Sargent, and as *Franklinia Altamaha* Marshall.

NAME IN USE

Franklinia

[43] F. V. Coville has called the writer's attention to the existence of Early's map of Georgia, published in 1818, on which the river we now call Altamaha is spelled Alatamaha. This fact would seem to show clearly that Marshall's original designation, *Franklinia Alatamaha*, of this tree was written in accordance with the early spelling of this Georgia river. On this ground the writer has adopted the original spelling, *Alatamaha*. In *Gordonia Alatamaha* Sargent (Man. Trees N. A. ed. 2, 752, 1922) this spelling is recognized.

Family CANELLACEÆ

CANELLA P. Browne

Canella winterana (Linnæus) Gaertner. **Cinnamon-bark.**

RANGE.—Southern Florida (southern Monroe County and Keys); West Indies and Bahamas.

NOTE ON NOMENCLATURE.—Originally described as *Laurus Winteriana* Linnæus, and later as *Canella alba* Murray.

NAMES IN USE

Cinnamon-bark (Fla.).
Whitewood.
Wild Cinnamon.
Cinnamon Wood (lit.).

Family TAMARICACEÆ

TAMARIX Linnæus

Tamarix gallica Linnæus. **Tamarisk.**

RANGE.—Native of southern Europe. Extensively planted for ornament from Massachusetts and southern Michigan to the Gulf coast region, where it grows spontaneously, sometimes forming thickets.

NAMES IN USE

"Tamarix."
Tamarisk.
"Salt Pine."

Family KOEBERLINACEÆ

KOEBERLINIA Zuccarini

Koeberlinia spinosa Zuccarini. **All-thorn.**

RANGE.—Texas (from valley of lower Rio Grande) to southern Arizona; northern Mexico; Lower California.

NAMES IN USE

Junco Tree.
All-thorn (Texas)

Family CARICACEÆ

CARICA Linnæus.

Carica papaya Linnæus. **Papaya.**

RANGE.—Southern Florida (southern border of Biscayne Bay, and Indian River on the east coast to the southern keys); West Indies; southern Mexico; South America (tropical parts).

NAMES IN USE

Pawpaw.
Papaya.

Family CACTACEÆ

CARNEGIEA Britton and Rose

Carnegiea gigantea (Engelmann) Britton and Rose. **Giant Cactus.**

RANGE.—Central and southern Arizona (from San Pedro River to the Colorado River between Needles and Yuma; Santa Catalina and Rincon Mountains); southward into Mexico (Sonora).

NOTE ON NOMENCLATURE.—Formerly designated as *Cereus giganteus* Engelmann.

NAMES IN USE

Giant Cactus (N. Mex., Ariz.).
Saquarro (Ariz., sometimes written Suwarro and Suwarrow, and Sahuarro).
Mountain Cactus (Calif., lit.).

CEPHALOCEREUS Pfeiffer

Cephalocereus deeringii Small.

RANGE.—Florida (Rocky hammocks, Lower Metacumbe Key; possibly on Umbrella Key.—Fide J. K. Small).

OPUNTIA Adanson

Opuntia fulgida Engelmann. **Cholla.**

RANGE.—Through southern Arizona (south of Colorado Plateau in Pima, Maricopa, Pinal, and Cochise Counties; Santa Catalina, Santa Rita, and Rincon Mountains); southward into Mexico (Sonora).

NAME IN USE

Cholla (Ariz.)

Opuntia spinosior (Engelmann) Toumey. **Tasajo.**

RANGE.—Through southern Arizona (south of the Colorado Plateau; Santa Rita, Santa Catalina, and Rincon Mountains); southward into Mexico (Sonora).

NAMES IN USE

Tassajo (Ariz.).
Cholla (Ariz.).
Tasajo.

Opuntia versicolor Coulter. **Cholla.**

RANGE.—Southern Arizona (foothills and lower slopes of Santa Catalina, Santa Rita, and Rincon Mountains); southward into Mexico (northern Sonora).

NAME IN USE

Cholla (Ariz.)

Family PUNICACEÆ

PUNICA Linnæus

Punica granatum Linnæus. **Pomegranate.**

RANGE.—Native of northern Africa and western Asia. Long and widely cultivated for ornament and for its fruit in warm and temperate climates. Escaped from cultivation in southern Florida, where it has become naturalized.

NAMES IN USE

Pomegranate.
Punic Apple.
Garnet Apple.

Family LYTHRACEÆ

LAGERSTROEMIA Linnæus

Lagerstroemia indica Linnæus. **Crape Myrtle.**

RANGE.—Native of India. Widely planted for ornament from southern Maryland to Florida and westward to eastern Texas. Sparingly naturalized in and near gardens.

Family RHIZOPHORACEÆ

RHIZOPHORA Linnæus

Rhizophora mangle Linnæus. **Mangrove.**

RANGE.—Southern coast of Florida (Indian River on the east coast and Tampa Bay on the west coast to southern islands); Lower California; from Central America along northern and eastern coast of South America to the limits of the tropics; Bermuda, Bahamas, West Indies, and Galapagos Islands.

NAME IN USE

Mangrove (Fla.)

Family MYRTACEÆ [44]

EUGENIA Linnæus

Eugenia buxifolia (Swartz) Willdenow. **Gurgeon Stopper.**

RANGE.—Florida coast (on the east, Cape Canaveral to southern keys; and on the west, Caloosahatchee River to Cape Sable); West Indies and Bahamas.

NAMES IN USE

Gurgeon Stopper (Fla.). Spanish Stopper (lit.).

Eugenia axillaris (Swartz) Willdenow. **White Stopper.**

RANGE.—Florida coast (from St. Johns River to the southern keys); West Indies and Bahamas.

NOTE ON NOMENCLATURE.—Formerly designated as *Eugenia monticola* (Swartz) de Candolle.

NAMES IN USE

Stopper (Fla.). White Stopper (Fla.).

Eugenia rhombea (Berg) Krug and Urban. **Red Stopper.**

RANGE.—Florida Keys (Key West and Umbrella Key); Bahamas and West Indies.

NOTE ON NOMENCLATURE.—Formerly designated as *Eugenia procera* Nuttall, not Poiret.

NAMES IN USE

Red Stopper (Fla.). Spiceberry (Fla.).
Stopper.

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[44] *Psidium guajava* Linnæus, Guava, a native of tropical America, has been recorded as escaped from cultivation in southern Florida and southern California in old fields and thickets (J. K. Small, Flor. S. E. U. S. 833, 1903); Britton and Shafer (North Am. Trees, 729, 1908).

Eugenia confusa de Candolle. **Red Stopper.**

RANGE.—Florida (Biscayne Bay, Old Rhodes Key, and Elliotts Key); Bahamas and West Indies.

NOTE ON NOMENCLATURE.—Formerly designated as *Eugenia Garberi* Sargent.

NAMES IN USE

Ironwood Red Stopper

Eugenia dicrana Berg. **Naked Stopper.**

RANGE.—Florida coast (Mosquito Inlet to Cape Canaveral on the east and on the west Caloosahatchee River to Cape Romano; Key West and in vicinity of Biscayne Bay); West Indies and Bahamas.

NOTE ON NOMENCLATURE.—Formerly designated as *Anamomis dichotoma* (Poiret) Sargent.

NAMES IN USE

Naked-wood (Fla.). Naked Stopper.

Eugenia simpsonii (Small) Sargent. **Stopper.**

RANGE.—Southern Florida (Arch Creek Hammock—north of Little River; Paradise and Long Keys, Dade County).

NOTE ON NOMENCLATURE.—Formerly designated as *Anamomis Simpsonii* Small.

NAME IN USE

Stopper

Eugenia longipes Berg. **Stopper.**

RANGE.—Florida (usually a shrub, but arborescent at various places on the Everglade Keys, particularly on Long Key.—Fide J. K. Small).

NOTE ON NOMENCLATURE.—Formerly designated as *Anamomis longipes* Britton.

NAME IN USE

Stopper

Eugenia bahamensis Kiearsk. **Stopper.**

RANGE.—Originally described from the Bahama Islands. Native in southern Florida (Lower Everglade Keys, especially on Long Pine Key, west of Royal Palm Hammock, Dade County, and on the lower Florida Keys).

NOTE ON NOMENCLATURE.—Designated also as *Anamomis bahamensis* Britton.

NAME IN USE

Stopper

CALYPTRANTHES Swartz

Calyptranthes pallens Griseback. **White Spicewood.**

RANGE.—Southern coast of Florida (Dade County) and keys; Bahamas and West Indies.

NOTE ON NOMENCLATURE.—Formerly designated as *Chytraculia chytraculia* (Linnæus) Sudworth.

NAME IN USE

White Spicewood

Calyptranthes zuzygium Swartz. **Spicewood.**

RANGE.—Southern Florida (Paradise Key and Long Key—Dade County); Bahamas, Cuba, Jamaica, Haiti.

NAME IN USE

Spicewood

Family MELASTOMACEÆ

TETRAZYGIA A. Richard

Tetrazygia bicolor (Miller) Cogniaux.

RANGE.—Southern Florida (at Homestead in Dade County, and on Long and Paradise Keys—in the Everglades). Occurs also in the Bahamas and West Indies. First detected within our borders in 1908; added to our tree flora in 1911.[45]

Family COMBRETACEÆ[46]

BUCIDA Linnæus

Bucida buceras Linnæus. **Black Olive-tree.**

RANGE.—Southern Florida (Elliotts Key); West Indies, coast Caribbean Sea, and Bay of Panama.

NOTE ON NOMENCLATURE.—Formerly designated as *Terminalia buceras* Wright.

NAME IN USE

Black Olive-tree

CONOCARPUS Linnæus

Conocarpus erecta Linnæus. **Buttonwood.**

RANGE.—Coast of southern Florida (Cape Canaveral and Tampa Bay to southern Keys); Bahamas and West Indies; Central and South America; Galapagos Islands; west coast of Africa.

NAME IN USE

Buttonwood (Fla.)

LAGUNCULARIA Gærtner

Laguncularia racemosa (Linnæus) Gærtner fils. **White Buttonwood.**

RANGE.—Coast of southern Florida (Manitee County on the west to Brevard County on the east); West Indies, Bermuda, Bahamas, Mexico, Central and South America, and western Africa.

NAMES IN USE

White Buttonwood (Fla.). Buttonwood (Fla.).
White Mangrove (Fla.).

Family ARALIACEÆ

ARALIA Linnæus

Aralia spinosa Linnæus. **Devil's Walking-stick.**

RANGE.—From Pennsylvania (Allegheny Mountains in Clearfield, Cambria, Westmoreland, Bedford, and Fayette Counties) to Florida; westward to southern Indiana, southeastern Iowa, southeastern Missouri, southeastern Oklahoma, southwestern Arkansas (Rich Mountain), and eastern Texas.

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[45] C. S. Sargent (Trees and Shrubs, II, Pt. III, 173, 1911); J. K. Small (Flor. So. E. U. S., ed. 2, 826, 1913).

[46] *Terminalia catappa* Linnæus, Indian Almond, a tree native of the East Indies, has been recorded as naturalized in southern Florida and on Key West by J. K. Small (Flor. S. E. U. S., 830, 1902) and by Britton and Shafer (North Am. Trees, 717, 1908). It is widely planted and naturalized in tropical America and in the West Indies, and probably should be added to our arborescent flora.

NAMES IN USE

Angelica-tree.
Hercules Club.
Devil's Club (Ind.).
Thorny Ash (La., Tex.).
Devil's Walking-stick.
Spikenard Tree.
Prickley Elder.
Pigeon-tree.
Prickly Ash.

Family NYSSACEÆ

NYSSA Linnæus

***Nyssa sylvatica** Marshall. **Black Gum.**

RANGE.—From Maine (Kennebec River) to northern Florida; west to southern Ontario, southern Michigan (up to Gratiot County). southern Missouri, Oklahoma, southwestern Arkansas (Rich Mountain; Hempstead County) and Texas (Brazos River).

NOTE ON NOMENCLATURE.—Formerly designated as *Nyssa multiflora* Wangenheim.

NAMES IN USE

Black Gum (N. J., Pa., Del., Va., W. Va., N. C., S. C., Ga., Ala., Fla., Miss., La., Tex., Ill., Ind.-trade).
Sour Gum (Vt., Mass., R. I., N. Y., N. J., Pa., Del., Va., W. Va., S. C., Fla., Tex., Ohio, Ind., Ill.).
Tupelo (Mass., R. I., N. J., Del., S. C., Ala., Fla., Miss., Tex., Ill., Ohio, and hort.).
Pepperidge (Vt., Mass., R. I., N. Y., N. J., S. C., Tenn., Mich., Ohio, Ont.).
Wild Peartree (Tenn.).
Yellow Gumtree (Tenn.).
Gum (Md.).
Stinkwood (W. Va.).
Tupelo Gum (Fla.).
Bowl Gum.

VARIETY DISTINGUISHED IN CULTIVATION

Nyssa sylvatica pendula (Temple) Sudworth. **Weeping Black Gum.**

Nyssa biflora Walter. **Swamp Black Gum.**

RANGE.—Maryland (Montgomery County) to Florida (near Fort Ogden) and westward to western Louisiana and eastern Texas.

NAMES IN USE

Black Gum (N. C.).
Lowland Black Gum (N. C.).
Lowland Gum (N. C.).
Swamp Black Gum (N. C.).
Sour Gum (N. C.).
Tupelo Gum (N. C.).
Bowl Gum (N. C.).
Water Gum.
Southern Gum (Ala.).

Nyssa ogeche Marshall. **Sour Tupelo Gum.**

RANGE.—From South Carolina (near coast and through the Altamaha region of eastern Georgia) to northern Florida (Clay County) and western Florida (Washington County).

NOTE ON NOMENCLATURE.—Formerly designated as *Nyssa capitata* Walter.

NAMES IN USE

Sour Tupelo (S. C., Fla.).
Ogeechee Lime (S. C., Fla.).
Gopher Plum (Fla.).
Tupelo.
Wild Limetree.
Limetree.
Ogechee Plum.
Lone Tupelo.
Sour Tupelo Gum.

*Nyssa aquatica Linnæus. **Tupelo Gum.**

RANGE.—Coast region from southern Virginia to northern Florida, and through the Gulf States to Texas (Nueces River); northward through Arkansas, west Tennessee and Kentucky, southeastern Missouri to southern Illinois (lower Wabash River).

NOTE ON NOMENCLATURE.—Formerly designated as *Nyssa uniflora* Wangenheim.

NAMES IN USE

Large Tupelo (Ala., La., Tex.).
Tupelo Gum (N. C., Ga., Ala., Miss., La., trade).
Sour Gum (Ark., Mo., N. C.).
Bay Poplar (Ala. and Tenn. trade).
Swamp Poplar (trade).
Hickory Poplar (trade).
Chickasawatchie Whitewood (trade).
Largeleaf White Gum (trade).
Swamp Black Gum (lit.).
Papaw Gum (Va.).
Gray Gum (S. C. trade).
Yellow Gum (N. C.).
Gum Cottonwood.
Swamp Tupelo (S. C., La.).
Cotton Gum (N. C., S. C., Fla., trade).
Tupelo (N. C., S. C., trade).
Wild Olivetree (La.).
Olivier à grandes feuilles (La.).
Olivetree (Miss.).
White Gum (N. C.).
Swamp Gum (N. C.).
Bowl Gum (N. C.).
Ladle Gum (N. C.).
Sap Gum (trade).
Big Tupelo (lit.).
Bastard Cottonwood (La.).

Family CORNACEÆ

CORNUS Linnæus [47]

Cornus florida Linnæus. Dogwood.

RANGE.—From southern Maine to central Florida, and west through southern Ontario, southern Michigan (up to Montcalm County) to southeastern Kansas, southwestern Missouri, Oklahoma, southwestern Arkansas (Rich Mountain; Hempstead County), Texas (Brazos River), and northern Mexico (mountains).

NAMES IN USE

Flowering Dogwood (Mass., R. I., N. Y., N. J., Del., Pa., Va., N. C., S. C., Miss., La., Ark., Mo., Ill., Kans., Mich., Ont., Ohio, Ind.).
Dogwood (N. J., Pa., Del., W. Va., N. C., S. C., Ala., Fla., La., Ky., Ohio, Ind., Mich.).
Boxwood (Conn., R. I., N. Y., Miss., Mich., Ky., Ind., Ont.).
False Box-dogwood (Ky.).
New England Boxwood (Tenn.).
Flowering Cornel (R. I.).
Cornel (Tex.).
False Boxwood (lit.).
White Cornel.
Arrow-wood.
Indian Arrow-wood.
Florida Dogwood.

VARIETIES DISTINGUISHED IN CULTIVATION

Cornus florida pendula Dippel. Weeping Dogwood.

Cornus florida rubra André. Red Dogwood.

Cornus nuttallii Audubon. Pacific Dogwood.

RANGE.—From southern coast of British Columbia (Lower Fraser River and Vancouver Island) through western Washington, Oregon, and California (coast ranges to San Bernardino Mountains and western slopes of the Sierra Nevada).

[47] *Cornus florida* Linnæus (and its varieties) and *Cornus nuttallii* Audubon, the so-called flowering dogwoods, differ from our other arborescent species in having their flowers surrounded by a corola-like involucre composed of from four to six showy white (sometimes pink) bracts. Because of their showy appearance, these bracts are popularly often taken to be petals of the true flowers, which are, however, small greenish bodies situated in the center of this showy involucre. On account of this difference in the structure of the flower clusters of these two species J. K. Small (Flor. S. E. U. S., 854, 1903) and Britton and Shafer (North Am. Trees, 744, 1908) have taken up for *Cornus florida* Linnæus the name *Cynoxylon floridum* (Linnæus) Rafinesque, and for *Cornus nuttallii* Audubon, *Cynoxylon Nuttallii* (Audubon) Shafer. The writer prefers to retain these popularly well-known trees in the genus *Cornus*

NAMES IN USE

Dogwood (Calif., Oreg., Wash.).
California Dogwood (Calif.).
Flowering Dogwood (Oreg., Calif.).
Western Dogwood.
Pacific Dogwood.

Cornus alternifolia Linnæus. **Blue Dogwood.**

RANGE.—From Nova Scotia and New Brunswick (through St. Lawrence Valley) to Lake Superior (northern shores) and Minnesota; south through the Northern States (and in the Appalachian Mountains) Iowa and southern Missouri, southwestern Georgia and Alabama (Covington County), and Florida.

NAMES IN USE

Dogwood (Vt., Mass., R. I., Conn., N. Y., N. J., Pa., Va., W. Va., N. C., Ga., Fla., Ky., Ill., Wis., Minn., Ohio, Ont.).
Blue Dogwood (Pa.).
Purple Dogwood (Pa.).
Umbrella-tree (R. I.).
Pigeonberry (N. Y.).
Alternate-leaved Dogwood (Mich.).
Green Osier (Vt.).
Pagoda Dogwood (lit.).
Alternate-leaved Cornel.

Cornus asperifolia Michaux.[48] **Roughleaf Dogwood.**

RANGE.—Southern Ontario (north shores of Lake Erie) to South Dakota, and southward to western Florida; westward to eastern Nebraska and Kansas, and throughout Missouri, southwestern Arkansas and Oklahoma to eastern Texas.

NAMES IN USE

Roughleaf Dogwood.
Rough-leaved Cornel.

GARRYA Douglas

Garrya elliptica Douglas. **Tasseltree.**

RANGE.—Oregon through California to the Santa Lucia Mountains (Monterey County).

NAMES IN USE

Quinine Bush.
Fringe-tree.
Silk-tassel Bush.
Silk-tassel Tree.
Tasseltree.

Family ERICACEÆ

ELLIOTTIA Muehlenberg

Elliottia racemosa Muehlenberg.

RANGE.—Eastern border of Georgia (vicinity of Augusta, valley of the Savannah River, Richmond County, and also in Bulloch, Burke, Telfair, and Coffee Counties).

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[48] *Cornus stricta* LaMarck, Stiff Dogwood, occurring from Virginia to Florida and westward to Missouri and Texas, possibly should be admitted to our arborescent flora. It has been recorded as a small tree by J. K. Small (Flor. So. E. U. S., 853, 1903) under the name *Svida stricta* (LaMarck) Small, and by Britton and Shafer (North Am. Trees, 742, 1908) under *Cornus*. As the writer knows this species it is commonly only a shrub, an arborescent form of it not yet having been observed.

H. G. Calkins, Supervisor of the Coronado National Forest (southern Arizona) has recently (1921) reported, through District Forester Frank C. W. Pooler, finding *Cornus stolonifera* Michaux of tree size in the Santa Catalina Mountains at elevations of from 7,500 to 8,000 feet. This species, heretofore known only as a shrub, previously has not been reported as far south in the Rocky Mountain region as southern Arizona. Further investigations of the arborescent growth of this is to be made.

RHODODENDRON Linnæus

Rhododendron maximum Linnæus.[49] Great Rhododendron.

RANGE.—From Nova Scotia to Lake Erie (north shores) and southward in New England and New York (and along the Appalachian Mountains) to northern Georgia; westward to Ohio (southeastern).

NAMES IN USE

Great Laurel (N. H., Mass., R. I., N. Y., N. J., Pa., N. C., Minn.).
Rose Bay (R. I., Pa., N. C., S. C.).
Bigleaf Laurel (Pa.).
Big Laurel (W. Va.).
Laurel (R. I., W. Va., Va., N. C., S. C.).
Mountain Laurel (Pa., S. C.).
Rhododendron (R. I., N. Y., Pa., Va., S. C.).
Dwarf Rose Bay-tree (Tenn.).
Spoon Hutch (N. H.).
Wild Rose Bay and Deertongue Laurel (lit. of domestic medicine).
Banana Bush (W. Va.).
Rose-bay Rhododendron (lit.).
Great Rhododendron.
Deer Laurel.
Wild Laurel.
Great Rose-bay.

VARIETIES DISTINGUISHED IN CULTIVATION

Rhododendron maximum roseum Pursh. Rose-flower Rhododendron.
Rhododendron maximum purpureum Pursh Purple-flower Rhododendron.
Rhododendron maximum album Pursh. White-flower Rhododendron.

Rhododendron catawbiense Michaux. Catawba Rhododendron.

RANGE.—Mountains from Virginia and West Virginia to Georgia and Alabama (Lookout Mountain, on Little River in Dekalb County).

NAMES IN USE

Catawba Rhododendron (Ala.).
Rose Bay (Ala.).
Mountain Rose Bay (lit.).
Carolina Rhododendron (lit.).
Catawba Rose-bay.
Carolina Rose-bay.
Laurel.

KALMIA Linnæus

Kalmia latifolia Linnæus. Mountain Laurel.

RANGE.—From New Brunswick to Lake Erie (northern shores); south to Virginia, Ohio, Indiana, and Tennessee (and in the Appalachian Mountains) to western Florida; west through the Gulf States to western Louisiana.

NAMES IN USE

Laurel (N. H., Vt., Mass., R. I., Conn., N. J., N. Y., Pa., Del., Va., N. C., S. C., Miss., La., Mo.).
Calico Bush (Vt., R. I., N. Y., Pa., Del., N. C., S. C., Ala., Miss., La.).
Spoonwood (N. H., Mass., R. I., Pa., Miss.).
Ivy (Conn., Md., W. Va., Va., N. C., S. C., Miss.).
Poison Ivy (Tenn., Ala.).
Poison Laurel (Ala.).
Mountain Laurel (Vt., Mass., W. Va., Ky., Tenn.).
Sheep Laurel (Pa.).
Wood Laurel (Pa.).
Small Laurel (W. Va.).
Kalmia (Pa., S. C.).
Calico-tree (Tenn.).
Calico Flower (Tenn.).
Mountain Ivy (Va.).
Big-leaved Ivy (lit.).
Ivywood (S. C.).

[49] Britton and Shafer (North Am. Trees, 754, 1908) record *Rhododendron californicum* Hooker, as a small tree. It occurs in the coast region from California to British Columbia. As I know this species it occasionally reaches a height of 20 feet, or more, but the usual form of the stem is, in my judgment, like an overgrown shrub.

OXYDENDRUM de Candolle

Oxydendrum arboreum (Linnæus) de Candolle. Sourwood.

RANGE.—From southwestern Pennsylvania and along the Appalachian Mountains to western Florida and southern Alabama (Mobile Bay); westward to southern Indiana, eastern Tennessee (mountains), and western Louisiana.

NAMES IN USE

Sourwood (W. Va., N. C., S. C., Ga., Fla., Ala., Miss., La., Ky., Ohio).
Sorrel-tree (Pa., N. C., S. C., Miss., La., Ohio).
Sour Gum Bush (Ohio).
Sour Gum (W. Va.).
Arrow-wood (W. Va., La.).
Titi (S. C.).
Lily of the Valley Tree.
Elk-tree.

LYONIA Nuttall

Lyonia ferruginea (Walter) Nuttall.

RANGE.—Coast region from South Carolina to Florida (Tampa Bay and in the vicinity of Apalachicola); Mexico; West Indies.

NOTE ON NOMENCLATURE.—Formerly designated as *Andromeda ferruginea* Walter and as *Xolisma ferruginea* (Walter) Heller.

NAME IN USE

Titi (Fla.)

ARBUTUS Linnæus

Arbutus menziesii Pursh. Madroño.

RANGE.—Coast region from British Columbia (islands at Seymour Narrows) to southern California (coast ranges to Santa Lucia Mountains, Monterey County); Sierra Nevada foothills (in Butte, Yuba, Nevada, Placer, and Amador Counties); also San Diego County (Cleveland National Forest on Palomar Mountain on Pauma Creek).

NAMES IN USE

Madroña (Calif., Oreg.).
Madrove (Calif.).
Laurel-wood (Oreg.).
Madrone-tree.
Laurel (Oreg.).
Manzanita (Oreg.).
Madrone (hort.).
Madroño.

Arbutus texana Buckley.[50] Texas Madroño.

RANGE.—Texas (Travis County and valley of the Rio Blanco, Hays County to Eagle and Guadaloupe Mountains; Davis Mountains and Chisos Mountains); Mexico (Sierra Madre in Nuevo Leon).

NOTE ON NOMENCLATURE.—Formerly designated as *Arbutus xalapensis* Humboldt, Bonpland, and Kunth.

NAMES IN USE

Manzanita.
Madroña.
Madrone-tree.
Laurel.
Texas Madroño.

[50] *Arbutus xalapensis* Humboldt, Bonpland, and Kunth has long been believed to include both the Mexican and Texas Madroños. The writer has not seen authentic specimens of the Mexican plant. It seems probable that, as indicated by Britton and Shafer (North Am. Trees, 759, 1908), the Mexican tree is specifically distinct from the Texas Madroño, in which case the correct name for the latter is *Arbutus texana* Buckley, which has been adopted by Britton and Shafer (l. c.).

Arbutus arizonica (Gray) Sargent.[51] **Arizona Madroño.**

RANGE.—Southern Arizona (Santa Catalina, Santa Rita, Huachuca, Chiricahua, Animas, Dragoon, and San Luis Mountains); southward into Mexico (Sierra Madre in Chihuahua).

NOTE ON NOMENCLATURE.—Formerly designated as *Arbutus xalapensis* var. *arizonica* Gray.

NAMES IN USE

Madroña (Ariz.). Arizona Madroño.

VACCINIUM Linnæus

Vaccinium arboreum Marshall.[52] **Tree Huckleberry.**

RANGE.—From southeastern Virginia and North Carolina to Florida (Caloosahatchee River); westward in the Gulf States to eastern Texas (Matagorda Bay); northward through Oklahoma, Arkansas, Missouri, and Tennessee to southern Illinois and Indiana.

NAMES IN USE

Farkleberry (N. C., S. C., Fla., Miss., La., Mo.).
Sparkleberry (N. C., S. C., Ala., Fla.).
Myrtle Berries, (La.).
Bluet (La.).
Tree Huckleberry (S. C.).
Gooseberry (N. C.).
Whortleberry (lit.).
Winter Huckleberry.

Vaccinium arboreum glaucescens (Greene) Sargent. **Tree Huckleberry.**

RANGE.—Illinois (southern); southern Missouri to eastern Oklahoma, Arkansas, western Louisiana, and eastern Texas.

NAME IN USE

Tree Huckleberry

Family MYRSINACEÆ

ICACOREA Aublet

Icacorea paniculata (Nuttall) Sudworth. **Marlberry.**

RANGE.—Coast of southern Florida (on the east coast from Mosquito Inlet to southern Keys and on the west coast from Caloosahatchee River to Cape Romano); interior to Lake Okeechobee; Bahamas, Cuba, and southern Mexico.

NOTE ON NOMENCLATURE.—Formerly designated as *Cyrilla paniculata* Nuttall, *Ardisia pickeringia* Torrey and Gray and as *Ardisia paniculata* Sargent.

NAMES IN USE

Marlberry (Fla.). Cherry (Fla.).

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[51] The question of what plants properly can be considered arborescent is always difficult to decide, and in no case is it more perplexing than in the case of two or three species of manzanita, such as *Arctostaphylos manzanita* Parry, *Arctostaphylos glauca* Lindley, and *Arctostaphylos tomentosa* (Pursh) Douglas. While generally these manzanitas are shrubs, forming a conspicuous element of the California and Oregon foothills chaparral, occasional individuals are of treelike form, the single trunk being from 4 to 12 inches or more in diameter near the ground, with from 12 to about 18 inches of clear length, surmounted by a wide-branched crown. With some reluctance, however, these treelike forms are for the present excluded from the Check List.

[52] Some authors (J. K. Small in 1903 and Britton and Shafer in 1908) have transferred this and other species of Vaccinium to the family *Vacciniaceæ* Lindley, and have adopted in place of *Vaccinium* Linnæus (1753) the genus *Batodendron* Nuttall (1843), under which the Farkleberry becomes *Batodendron arboreum* (Marshall) Nuttall.

RAPANEA Aublet

Rapanea guianensis Aublet.[53]

RANGE.—Southern Florida (east and west coasts from Indian River and Palmetto, Manatee County, southward to the Keys); Bahamas, Jamaica, Porto Rico, Trinidad, and West Indies to Brazil, Mexico, and Bolivia.

NAME IN USE

Myrsine (lit.)

Family THEOPHRASTACEÆ

JAQUINIA Linnæus

Jaquinia keyensis Metzger. **Joewood.**

RANGE.—Off the coast of southern Florida (Gasparilla Island to southern Keys and Everglades); Bahamas, Jamaica, and Cuba.

NOTE ON NOMENCLATURE.—Formerly designated as *Jaquinia armillaris* Jaquin, a West Indian species, which was confused with our Florida plant.

NAMES IN USE

Joewood (Fla.). Sea Myrtle (lit.).

Family SAPOTACEÆ

CHRYSOPHYLLUM Linnæus

Chrysophyllum oliviforme Linnæus. **Satinleaf.**

RANGE.—Coast of southern Florida (on the east coast from Mosquito Inlet to southern Keys and on the west coast from Caloosahatchee River to Cape Sable); Bahamas and West Indies.

NOTE ON NOMENCLATURE.—Formerly designated as *Chrysophyllum monopyrenum* Swartz.

NAME IN USE

Satinleaf (Fla.)

SIDEROXYLON Linnæus[54]

Sideroxylon foetidissimum Jacquin.[55] **Mastic.**

RANGE.—Coast of southern Florida (on the east coast from Cape Canaveral to southern Keys and on the west coast from Cape Romano to the southern Keys); Bahamas and West Indies.

NOTE ON NOMENCLATURE.—Formerly designated as *Sideroxylon mastichodendron* Jacquin.

NAMES IN USE

Mastic (Fla.). Wild Olive (Fla.).

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[53] This species was first described under its present name in 1775, but it appears not to have been detected as a Florida tree until 1834 (*Myrsine floridana* de Candolle), under which name it appeared in Chapman's Flora of the Southern United States in 1860. Subsequently, J. K. Small (1903), Britton and Shafer (April, 1908), C. S. Sargent (May, 1908), added it to our tree flora under its present name. Britton and Shafer have applied *Myrsine* as a common name for this tree. Recently found up to Lake Okeechobee.

[54] Some authors have adopted the spelling *Siderozylum* Linnæus; which was published by Linnæus in his Genera in 1737, while he published the spelling *Siderozylon* in his Systema in 1735. Moreover, the fact that Linnæus adopted the latter spelling in his Species Plantarum, which was published in 1753, would seem to show that he preferred *Siderozylon* to his later *Siderozylum*, and there appears to be no good reason for not maintaining this earlier spelling.

[55] Britton and Shafer (North Am. Trees, 774, 1908) have taken for this tree the name *Sideroxylon foetidissimum* Jacquin, which was published in 1760, whereas *Sideroxylon mastichodendron* Jacquin, the name long applied to this tree, was established in 1786. Obviously, if these two names were applied to the same plant, the earlier name must be adopted.

LUCUMA Molina

Lucuma nervosa A. de Candolle.

RANGE.—Native of northern South America; southern Florida (Keys, in hammocks.—J. K. Small).

DIPHOLIS A. de Candolle

Dipholis salicifolia (Linnæus) A. de Candolle. **Bustic.**

RANGE.—Coast of southern Florida (Biscayne Bay and a number of southern Keys); Bahamas, and West Indies.

NAMES IN USE

Bustic (Fla.).
Cassada (Fla.).

BUMELIA Swartz[56]

Bumelia tenax (Linnæus) Willdenow. **Tough Buckthorn.**

RANGE.—Coast region South Carolina to Florida (Cape Canaveral and Cedar Keys); occurs also in southwestern Georgia.

NAMES IN USE

Black Haw (Fla.).
Ironwood (S. C., Fla.).
Tough Buckthorn (S. C.).

Bumelia lanuginosa (Michaux) Persoon. **Gum Elastic.**

RANGE.—From southern Georgia southward in western Florida to Cedar Key; westward and northward in Alabama (Mobile Bay to Dallas County), southern Mississippi, Louisiana, and eastern Texas (San Antonio River), extending northward through Arkansas and Oklahoma to southern Missouri, southeastern Kansas, and to southern Illinois.

NAMES IN USE

Gum Elastic.
Shittimwood (Tex.).
Black Haw (La.).
Chittimwood (lit.).
Woolly Buckthorn (lit.).
Slow-wood (La.).
False Buckthorn.

Bumelia lanuginosa albicans Sargent. **Gum Elastic.**

RANGE.—Eastern Texas (Lower Brazos River to San Antonio River); Mexico (Nuevo Leon).

NAME IN USE

Gum Elastic

Bumelia lanuginosa rigida Gray. **Gum Elastic.**

RANGE.—Western Texas to Arizona (Chiricahua and Santa Catalina Mountains) and south into Mexico (Nuevo Leon).

[56] The writer has not seen specimens of *Bumelia cassinifolia* Small, which is recorded as a shrub or small tree occurring only in "Sandy soil or woods of Louisiana." It appears to be closely related to *Bumelia lanuginosa* (Michaux) Persoon, of which it is possibly a form. As yet, also, he has not seen specimens of *Bumelia lucida* Small, which is said to occur as a small tree or shrub in Louisiana and eastern Texas. Further investigation is required to determine the relationship of this plant to other recognized species.

NAME IN USE

Gum Elastic

Bumelia monticola Buckley. **Buckthorn.**

RANGE.—Western and southern Texas (upper Brazos River to the Rio Grande and to the upper Guadalupe River); Mexico (Coahuila).

NAME IN USE

Buckthorn

Bumelia lycioides (Linnæus) Gaertner fils. **Buckthorn.**

RANGE.—From southern Virginia to Florida (northern), and westward to southern Indiana and Illinois, southern Missouri, central and western Tennessee, Arkansas, and eastern Texas (Brazoria County).

NAMES IN USE

Ironwood (Va., S. C., Ga., Fla., Miss., Ky.).
Southern Buckthorn (Miss., La., Tex., Ill.).
Carolina Buckthorn (N. C.).
Buckthorn (S. C.).
Chittimwood (Tex.).
Mock Orange (Fla.).
Bumelia Ironwood.

Bumelia angustifolia Nuttall. **Saffron Plum.**

RANGE.—Florida coast region (on the east coast from Indian River to southern Keys, and on the west coast from Cedar Keys to Cape Romano); Bahamas and Cuba.

NAMES IN USE

Saffron Plum (Fla.).
Downward Plum (Fla.).
Antswood (Fla.).

MIMUSOPS Linnæus

Mimusops parvifolia (Nuttall) Radlkofer. **Wild Dilly.**

RANGE.—Southern Florida (only on Keys); Bahamas and Cuba.

NOTE ON NOMENCLATURE.—Formerly designated as *Mimusops sieberi* Chapman, not A. de Candolle, and recently as *Mimusope emarginata* Britton.

NAMES IN USE

Wild Dilly (Fla.).
Wild Sapodilla (Fla.).

ACHRAS Linnæus

Achras sapota Linnæus. **Sapodilla.**

RANGE.—Native range uncertain—probably in the West Indies. Long cultivated for its fruit in southern Florida, where it is sparingly naturalized.

NOTE ON NOMENCLATURE.—By some authors designated as *Sapota Achras* Miller. Linnæus' first name for this tree is *Achras zapota* (1753), while later (1763) the name he applied is *Achras sapota*.

NAMES IN USE

White Sapotilla.
Chico.
Bullytree.
Sapotilla Plum.
Nispero.
Naseberry.
Nisberry.
Neesberry.
Sapodilla.

Family EBENACEÆ

DIOSPYROS Linnæus

***Diospyros virginiana** Linnæus. **Persimmon.**

RANGE.—Connecticut (Light-house Point, New Haven) and Long Island southward to southern Florida (De Soto County); westward through southern Pennsylvania and Ohio, southern Indiana and Illinois, southeastern Iowa, eastern Kansas, Oklahoma, southwestern Arkansas and in the Gulf States to Texas (Colorado River).

NAMES IN USE

Persimmon (Conn., N. Y., N. J., Pa., Del., Va., W. Va., N. C., S. C., Ga., Fla., Miss., La., Ky., Mo., Tex., Ark., Ill., Ind., Iowa, Ohio).
Date Plum (N. J., Tenn.).
Plaqueminier (La.).
Simmon (N. C., Fla.).
Possumwood (Fla.).
Common Persimmon (lit.).
Winter Plum.
Seeded Plum.

Diospyros virginiana platycarpa Sargent. **Persimmon.**

RANGE.—Missouri, Arkansas, Oklahoma, and eastern Kansas; probably elsewhere within the range of the species.

NAME IN USE

Persimmon

Diospyros virginiana mosieri Sargent. **Persimmon.**

RANGE.—Southern Florida (Dade County).

NAME IN USE

Persimmon

Diospyros texana Scheele.[57] **Black Persimmon.**

RANGE.—Southern (Colorado River) and southwestern Texas (extending into central part of State) and to Mexico (Nuevo Leon).

NAMES IN USE

Mexican Persimmon (Tex.).
Black Persimmon (Tex.).
Chapote (Tex.).

Family SYMPLOCACEÆ

SYMPLOCOS L'Heritier

Symplocos tinctoria (Linnæus) L'Heritier. **Sweetleaf.**

RANGE.—From southern Delaware (peninsula) to northern Florida; west in the Atlantic region, the Carolinas on the Blue Ridge Mountains, and through the Gulf States (in Alabama up to Tennessee River) to eastern Texas and southern Arkansas.

NAMES IN USE

Sweetleaf (Del., N. C., S. C., Fla., Ala.).
Yellowwood (N. C., S. C., Ala.).
Horse Sugar (Del., Ala., La.).
Florida Laurel (Fla.).
Common Sweetleaf (lit.).

[57] Under the genus *Brayodendron* Small, J. K. Small (Flor. S. E. U. S., 908, 1903), has adopted for this persimmon the name *Brayodendron Texanum* (Cheele) Small. Differences in the structure of the flowers, such as the number of stamens, absence of staminodia, united styles, etc., distinguished this genus from *Diospyros*.

Family STYRACACEÆ

HALESIA Linnæus [58]

Halesia carolina Linnæus. **Silverbell.**

RANGE.—From southern West Virginia (mountains) south to western Florida, western Kentucky and southern Illinois, central Alabama and Georgia.

NOTE ON NOMENCLATURE.—Formerly designated as *Halesia tetraptera* Ellis and as *Mohrodendron carolinum* (Linnæus) Britton.

NAMES IN USE

Snowdrop Tree (R. I., Pa., cult., N. C., S. C.).
Silverbell Tree (R. I., cult., N. C., Ala., Fla.).
Silverbell (Pa., cult.).
Wild Olive-tree (Tenn.).
Bell-tree (Tenn.).
Four-winged Halesia (Ala.).
Opossum-wood (Ala.).
Bell-wood (N. C.).
No-Name Tree (Ga.).
Silver Tree (Ga.).
Box-elder (N. C.).
Bell Olive-tree.
Rattle-box.

Halesia carolina mollis Perkins. **Silverbell.**

RANGE.—Within the range of the species.

NAME IN USE

Silverbell

Halesia carolina meehanii Perkins. **Silverbell.**

RANGE.—Originated in the nursery of Thomas Meehan & Sons, Germantown, Pa., and so far known only in cultivation.

NAMES IN USE

Meehan Silverbell. Silverbell.

Halesia monticola Sargent. **Mountain Silverbell.**

RANGE.—From western North Carolina and eastern Tennessee through western Georgia to Arkansas and eastern Oklahoma.

NOTE ON NOMENCLATURE.—Formerly not distinguished from *Halesia carolina* Linnæus.

NAMES IN USE

Tisswood (Tenn.). Mountain Silverbell.

Halesia monticola vestita Sargent. **Mountain Silverbell.**

RANGE.—Western North Carolina and probably elsewhere within the range of the species; southeastern Oklahoma and southwestern Arkansas (Rich Mountain).

NAME IN USE

Mountain Silverbell

Halesia parviflora Michaux. **Little Silverbell.**

RANGE.—Southern Georgia and northern Florida; Alabama (Lee County).

NOTE ON NOMENCLATURE.—Formerly designated as *Mohrodencron parviflora* (Michx.) Britton, and until recently known only as a shrub.

NAME IN USE

Little Silverbell

[58] The discovery in 1893 that the genus *Halesia* Linnæus, (Syst. Nat., ed. 10, 1044, 1759) was antedated by *Halesia* P. Browne (Hist. Jamaica, 205, 1756) seemed to necessitate the renaming of this group *Mohrodendron* Britton, which has been maintained for 15 years. It is now known, however, that *Halesia* of P. Browne is invalid, because in publishing it Browne did not cite in that connection a type species of the genus. Accordingly, *Halesia* Linnæus is now restored to use for our silver-bell trees.

Halesia diptera Ellis. **Two-wing Silverbell.**

RANGE.—Southeastern Georgia (vicinity of Savannah) to western Florida, and through the Gulf States to eastern Texas (Neches River); northward through Louisiana to Arkansas (southwestern corner).

NOTE ON NOMENCLATURE.—Formerly designated as *Mohrodendron dipterum* (Ellis) Britton.

NAMES IN USE

Snowdrop Tree (R. I., Del., cult., Ala., La., Tex.).
Silverbell Tree (R. I., Del., cult., Miss., Tex.).
Cow Licks (La.).
Two-wing Silverbell.
Southern Silver-bell Tree (lit.).

STYRAX Linnæus

Styrax grandifolia Aiton. **Snowbell.**

RANGE.—In the coast region from southeastern Virginia to western Florida, and westward in the Gulf region to Louisiana (extending into the northern sections of Georgia, Mississippi, and Louisiana).

NOTE ON NOMENCLATURE.—Formerly long known only as a tall shrub, but recently found to be a tree in Louisiana (northeastern West Feliciana Parish).

NAMES IN USE

Snowbell.
Mock Orange.

Family OLEACEÆ

FRAXINUS Linnæus

Fraxinus cuspidata Torrey.[59] **Flowering Ash.**

RANGE.—From southwestern Texas (Rio Grande) through southeastern New Mexico; southward into Mexico (mountains of Coahuila and Nuevo Leon to Santa Eulalia Mountains in Chihuahua).

NAMES IN USE

Flowering Ash.
Fragrant Ash (lit. and hort.).

Fraxinus greggii Gray. **Littleleaf Ash.**

RANGE.—Western Texas (from mouth of San Pedro River to Pecos River; Chisos Mountains) and southward into Mexico (Sierra Madre in Nuevo Leon).

NAMES IN USE

Littleleaf Ash.
Gregg Ash (lit.).

***Fraxinus quadrangulata** Michaux. **Blue Ash.**

RANGE.—From southern Ontario and southern Michigan to southern Iowa; southward to eastern Tennessee, northern Alabama (Jackson and Madison Counties), Missouri to southwestern Arkansas, and southeastern Kansas to northern Oklahoma. Range insufficiently known.[60]

NAMES IN USE

Blue Ash (Pa., cult., Ala., Ky., Mo., Ill., Mich.).
Ash (White), trade.

[59] So far as now known it is a shrub within the borders of United States, but it is believed to be arborescent in the mountains of Chihuahua, Mexico.

[60] Britton and Shafer (North Am. Trees, 800, 1908) extend the range of this ash into southern Ontario and to Minnesota.

***Fraxinus nigra** Marshall. **Black Ash.**

RANGE.—From northern shores of Gulf of St. Lawrence and to Manitoba (Lake Winnipeg) southward to Delaware (Newcastle County), Virginia (mountains), West Virginia, southern Illinois and Indiana, Iowa.

NOTE ON NOMENCLATURE.—Formerly designated as *Fraxinus sambucifolia* La Marck.

NAMES IN USE

Black Ash (Me., N. H., Vt., Mass., R. I., Conn., N. Y., N. J., Pa., Del., W. Va., Mo., Ohio, Ontario, Mich., Ill., Minn., trade).
Hoop Ash (Vt., N. Y., Del., Ohio, Ill., Ind.).
Basket Ash (Mass.).
Brown Ash (N. H., Tenn., trade).
Swamp Ash (Vt., R. I., N. Y.).
Water Ash (W. Va., Tenn., Ind.).
Splinter Ash (Conn.).
Ash (Black or Brown), trade.

Fraxinus caroliniana Miller. Carolina ~~Water~~ **Ash.**

RANGE.—Coast region from Virginia to Florida (Lake County); westward in the Gulf region (in Alabama up to Tuscaloosa, Baldwin, Clark, and Mobile Counties) to Texas (Neches River); extending in western Louisiana to southwestern Arkansas; reappearing at a few points inland from the coast in Mississippi, Georgia, and North Carolina; Cuba.

NAMES IN USE

Water Ash (N. C., S. C., Fla., Ala., Miss., La., Tex.).
Carolina Ash (Pa., cult.).
Poppy Ash (Ala.).
Pop Ash (Fla.).
Swamp Ash.

Fraxinus caroliniana rehderiana Sargent. Rehder ~~Water~~ **Ash.**

RANGE.—Within the range of the species.

NAME IN USE

Water Ash

Fraxinus pauciflora Nuttall.[61] Florida ~~Water~~ **Ash.**

RANGE.—Southern Georgia (St. Mary's River) to southern and western Florida (Lee County and lower Apalachicola River).

NOTE ON NOMENCLATURE.—Formerly designated as *Fraxinus platycarpa*, var. *Floridana* Wenzig, and as *Fraxinus floridana* Sargent.

NAMES IN USE

Water Ash.
Florida Water Ash.

Fraxinus anomala Torrey.[62] **Single-leaf Ash.**

RANGE.—From southwestern and western Colorado (McElmo River and Gunnison River at Grand Junction) through southern Utah to southern Nevada (western slopes of Charleston Mountains) to California (Inyo County); New Mexico (Mogollon Mountains); Arizona (Talfrey—southern rim of the Grand Canyon of the Colorado River).

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[61] *Fraxinus pauciflora* Nuttall (Silva, III, 61, t. 100, 1849), usually treated as a synonym of *Fraxinus caroliniana* Miller, was revived by J. K. Small (Flor. S. E. U. S., 918, 1903) as applying to a water ash said to occur from southern Georgia to Florida and Louisiana. Britton and Shafer (North Am. Trees, 800, 1908) who have also adopted this view, believe that *Fraxinus Floridana* Sargent is the same tree redescribed under a new name.

[62] *Fraxinus anomala triphylla* Jones (Proc. Cal. Acad. Sci., Sec. Ser., V, Pt. I, 707, 1895), found at "Pagumpa in the Grand Wash, 4,000 feet altitude," Arizona, is doubtless based on a rare trifoliate individual, which probably should be considered a phase of this variable species, which bears leaves with from one to sometimes five leaflets. The possible relationship of this form to the next species would seem to require further study.

NAMES IN USE

Ash (Utah).
Dwarf Ash (Utah).
Single-leaf Ash (lit.).
Anomalous Ash (lit.).

Fraxinus lowellii Sargent. **Ash.**

RANGE.—Northern Arizona (Oak Creek Canyon, Coconino County; Copper Canyon, Yavapai County).

NAME IN USE

Ash

Fraxinus standleyi Rehder. **Ash.**

RANGE.—Southwestern New Mexico (Grant, Luna, and Lincoln Counties), southern and northern Arizona (Cochise, Pima, and Coconino Counties); Mexico (Sonora).

NOTE ON NOMENCLATURE.—By some authors this, and possibly also its variety, are regarded only as forms of *Fraxinus velutina* Torrey.

NAME IN USE

Ash

Fraxinus standleyi lasia Rehder. **Ash.**

RANGE.—Southwestern New Mexico (Grant County); Arizona (Oak Creek and Sycamore Canyons; Fort Apache; White and Chiricahua Mountains). To be looked for elsewhere in these States.

NAME IN USE

Ash

***Fraxinus americana** Linnæus. **White Ash.**

RANGE.—From Nova Scotia and New Brunswick to Florida and westward through southern Quebec and Ontario to eastern Minnesota, eastern Nebraska and Kansas, Oklahoma, southwestern Arkansas (Rich Mountain, Hempstead County) and Texas (Trinity River).

NAMES IN USE

White Ash (Me., N. H., Vt., Mass., R. I., Conn., N. Y., N. J., Del., Pa., Md., Va., W. Va., N. C., S. C., Ga., Fla., Ala., Miss., La., Tex., Ky., Mo., Ill., Ind., Iowa, Kans., Nebr., Mich., Ohio, Ontario, Minn., N. Dak., Wis., trade).
Ash (N. C., Ark., Iowa, Wis., Ill., Mo., Minn.).
American Ash (Iowa).
Franc-Frene (Quebec).
Cane Ash (Ala., Miss., La.).
Ash (White), trade.

Fraxinus americana crassifolia Sargent.[63] **White Ash.**

RANGE.—Known now from trees growing in the Arnold Arboretum, Jamaica Plain, Massachusets, and from trees found at Mt. Victory, Harding County, Ohio, and at Campbell, Dunklin County, southeastern Missouri; occurs also southward into northeastern Texas (Bowie County).

NAME IN USE

White Ash

[63] According to C. S. Sargent (Bot. Gaz., LXVII, 241, 1919), under *Fraxinus americana subcoriacea*, the type of this variety is represented by trees that have been growing in the Arnold Arboretum since 1874, these trees having been raised from seed obtained from Ohio (Mount Victory, Harding County).

Fraxinus americana microcarpa Gray.[64] **Smallseed White Ash.**

RANGE.—Northern and southeastern Alabama (Morgan, Madison, and Barbour Counties) to middle Tennessee; northern Florida.

NAME IN USE

Smallseed White Ash

***Fraxinus biltmoreana** Beadle.[65] **Biltmore White Ash.**

RANGE.—Western New Jersey and eastern Pennsylvania to northern Georgia and Alabama; westward to West Virginia, Ohio, Kentucky, northern Indiana, Illinois (Richland County), central Tennessee, and southeastern Missouri.

NAMES IN USE

Ash (N. C.).
White Ash (N. C.).
Biltmore Ash.
Biltmore White Ash.

Fraxinus texensis (Gray) Sargent. **Texas Ash.**

RANGE.—Northern, Central, and western Texas (from the vicinity of Dallas to valley of Devil's River).

NOTE ON NOMENCLATURE.—Formerly designated as *Fraxinus americana* var. *texensis* Gray.

NAME IN USE

Mountain Ash (Tex.).
Texas Ash.

Fraxinus berlandieriana de Candolle. Berlandier **Mexican Ash.**

RANGE.—Western Texas (banks of San Antonio River, Nueces River, Rio Blanco, and other streams to the lower Rio Grande); Edwards Plateau; Mexico.

NAME IN USE

Berlandier's Ash (lit.).
Mexican Ash (lit.).

***Fraxinus pennsylvanica** Marshall. **Red Ash.**

RANGE.—From Nova Scotia to central Georgia; westward to Manitoba, South Dakota (Black Hills), eastern Nebraska, northeastern and eastern (border counties) Kansas and northern Alabama (St. Clair and Cullman Counties).

NAMES IN USE

Red Ash (Me., N. H., Vt., Mass., R. I., N. Y., N. J., Pa., Del., Md., W. Va., N. C., S. C., Fla., Ga., Ala., Miss., La., Ky., Mo., Ill., Kans., Nebr., Mich., Minn., Ontario).
Brown Ash (Me.).
Black Ash (N. J.).
River Ash (R. I., Ont.).
Bastard Ash (Vt.).
Ash (Nebr.).
Piss Ash (Vt.).
Ash (White), trade.

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[64] This variety, apparently well marked by its small fruit, probably was first discovered about 1875 in northern Florida and in southeastern Alabama (Eufaula, Barbour County). Subsequently (1889–1892) it was observed in northern Alabama and central Tennessee. All of the trees known to me bore only small fruit. The fact that the trees were growing in dry rocky situations and were rather dwarfed, would seem to account for the small fruit. The fruits of all of our ashes vary in size, and sometimes diminutive fruits are found mingled with those of normal size on the same tree. This fact, however, would hardly justify ignoring such a well-marked variety as the small-fruited white ash.

The southeastern Alabama specimens were collected by A. H. Curtiss in 1875, and George Vasey, Botanist of the U. S. Department of Agriculture, published (Rept. Com. Agr. 1875, 168, 1876) this note concerning them: "No. 211. *Fraxinus curtissi* n. sp. (?).—Southern States. Mr. Curtiss found at Eufaula, Ala., a large ash with remarkably small fruit." While there seems to be little doubt that this is the first name applied to the small-fruited white ash, Dr. Vasey's description is too meager to establish the fact.

[65] The Biltmore Ash was until 1893 confused with the White Ash, to which it is very closely related.

***Fraxinus pennsylvanica lanceolata** (Borkhausen) Sargent.[66] **Green Ash.**

RANGE.—From Maine (Penobscot County), Vermont (Lake Champlain) and southward in the Appalachian region to western Florida; westward to the Saskatchewan River, eastern ranges of the Rocky Mountains and extending into Utah (Wasatch Mountains) and eastern and northern Arizona (mountains), and through Texas (to Guadalupe River).

NOTE ON NOMENCLATURE.—Formerly designated as *Fraxinus viridis* Michaux f.

NAMES IN USE

Green Ash (Mass., R. I., Conn., N. Y., N. J., Pa., Del., N. C., S. C., Ala., Miss., La., Tex., Mo., Ill., Kans., Nebr., Mich., Minn., S. Dak., Ohio, Ontario, Iowa).
Blue Ash (Ark., Iowa).
White Ash (Kans., Nebr.).
Swamp Ash (Fla., Ala., Tex.).
Ash (Ark., Iowa, Nebr.).
Water Ash (Iowa).
Ash (White), trade.

Fraxinus profunda Bush. **Pumpkin Ash.**

RANGE.—Imperfectly known and as now understood the tree occurs at widely separated stations; western New York (fide C. S. Sargent); southern Illinois and Indiana; western Kentucky and Tennessee; southeastern Missouri and eastern Arkansas; southern Louisiana, eastern Mississippi, and western Florida.

NAME IN USE

Pumpkin Ash (Ark.)

Fraxinus velutina Torrey. **Velvet Ash.**

RANGE.—From southern New Mexico to southern and central Arizona.

NAMES IN USE

Ash (Tex., Ariz., Nev.).
Velvet Ash (lit.).
Velvety Ash (lit.).

Fraxinus velutina toumeyi (Britton) Rehder.[67] **Velvet Ash.**

RANGE.—Within the range of the species, extending also into Mexico (Sonora).

NAME IN USE

Velvet Ash

Fraxinus velutina coriacea (S. Watson) Rehder. **Desert Ash.**

RANGE.—Desert regions of southern Utah (vicinity of St. George) and Nevada (Ash Meadows), to southeastern California (Owen's Lake).

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[66] The relationship of the Green Ash to the Red Ash has long been a perplexing question, some authors treating them as distinct species, others considering the Green Ash a variety of the Red Ash, while still others have treated the Green Ash as a smooth-leafed phase only of the Red Ash. In eastern United States the Green Ash is fairly distinct in the characteristics of its twigs, foliage, and mature fruit but as it occurs farther west, clearly intermediate forms are found that show varietal relationship to the Red Ash.

Possibly distinct from the Red and Green Ashes is *Fraxinus campestris* Britton (Britton and Shafer, North Am. Trees, 799, 1908), which is said to occur from Montana and Manitoba to Wyoming and Kansas, and to differ from the Red Ash in its shorter-stalked or sessile lateral leaflets, which are relatively broader, and in its shorter fruit. I have not yet seen specimens of this ash, which, in the shorter-stalked leaflets, would seem to deserve varietal relationship to the Red Ash.

Fraxinus Darlingtonii Britton is here considered to be an exceptionally narrow-fruited form of *Fraxinus pennsylvanica* Marshall, to which also *Fraxinus Smallii* Britton possibly should be referred. C. S. Sargent (Man. For. Trees N. A. ed. 2, 842, 1922) remarks that the latter has the appearance of a hybrid between *Fraxinus americana* Linnæus and *Fraxinus pennsylvanica* var. *lanceolata* Sargent.

[67] *Fraxinus Toumeyi* Britton (Britton and Shafer, North Am. Trees, 803, 1908) is somewhat perplexing because of its apparently close relationship to *Fraxinus velutina* Torrey. Likewise, *Fraxinus attenuata* M. E. Jones (Contr. West. Bot., No. 12, p. 59, 1908) may prove to be distinct. First found in the valley of Palms, Lower California, in 1882, while in 1903 Professor Thornber detected it in the Santa Catalina Mountains, Arizona. Recently H. G. Calkins reports it from all divisions of the Coronado National Forest, southern Arizona. Some authors regard the latter species as distinct, and *Fraxinus Toumeyi* Britton only as a form of it.

NAMES IN USE

Desert Ash. "Native Ash."

Fraxinus velutina glabra (Thornber) Rehder. Arizona Smooth Ash

RANGE.—Within the range of the species.

NOTE ON NOMENCLATURE.—Originally named *Fraxinus glabra* Thornber (U. S. Nat. Herb.) and some authors are maintaining it under this name.

NAME IN USE

Smooth Ash

***Fraxinus oregona** Nuttall. **Oregon Ash.**

RANGE.—From southern British Columbia and Puget Sound (shores) southward through western Washington, Oregon, and California (coast region to San Francisco Bay and Santa Cruz Mountains; on foothills of the Sierra Nevada to mountains of San Bernardino and San Diego Counties).

NAMES IN USE

Oregon Ash (Calif., Wash., Oreg.). Ash (White), trade.
Water Ash (Calif.).

Fraxinus oregona glabra Rehder. **Smooth Oregon Ash.**

RANGE.—Southern California (Inyo, Los Angeles, and San Bernardino Counties).

NAME IN USE

Smooth Oregon Ash

FORESTIERA Poiret

Forestiera acuminata (Michaux) Poiret. **Swamp Privet.**

RANGE.—Southern Indiana and Illinois to central Tennessee and from southern Missouri to eastern Texas (Colorado River); eastward from Louisiana to western Florida and Georgia (Richmond County).

NAMES IN USE

Swamp Privet. Texas Adelia (lit.).

Forestiera acuminata vestita E. J. Palmer. **Woolly Swamp Privet.**

RANGE.—Arkansas (Van Buren, Crawford County; Fulton, Hempstead County; Miller County); Louisiana (Rapides Parish).

NAME IN USE

Woolly Swamp Privet

CHIONANTHUS Linnæus

Chionanthus virginica Linnæus. **Fringetree.**

RANGE.—From southeastern Pennsylvania (Lancaster and Chester Counties) to northeastern Kentucky and southward to western Florida; westward to eastern Texas (Brazos River); extending northward into Arkansas and Oklahoma.

NAMES IN USE

Fringe-tree (R. I., cult., N. Y., cult., N. J., Pa., Del., D. C., N. C., S. C., Fla., Miss., La., Tex., Mo.).
White Fringe (Mass., cult., R. I., Pa.).
American Fringe (W. Va.).
White Ash (W. Va.).
Old Man's Beard (N. C., S. C., Ala., Fla., Miss., La.).
Flowering Ash (S. C.).
Snowflower-tree (Tenn.).
Graybeard (La., Tex.).
White Fringetree.

OSMANTHUS Laureiro

Osmanthus americanus (Linnæus) Bentham and Hooker. **Devilwood.**

RANGE.—Coast region from North Carolina (Cape Fear River) to Florida (Lake and Orange Counties) and west to eastern Louisiana.

NAMES IN USE

Devilwood (Ala., Fla.). Wild Olive (Fla.).

Osmanthus floridana Chapman.

RANGE.—Southern Florida (in hammocks).
NOTE ON NOMENCLATURE.—By some authors considered not to be consistently distinct from the preceding species, from which it is distinguished by the usually finely hairy flower clusters, yellowish green larger fruit, and sometimes larger thicker leaves.

Family APOCYNACEÆ

NERIUM Linnæus

Nerium oleander Linnæus. **Oleander.**

RANGE.—A native of the Mediterranean region. Long and widely cultivated for ornament in tropical and subtropical countries. Growing spontaneously in the vicinity of abandoned home sites, on roadsides, and in old fields from Florida westward in Gulf region.

NAMES IN USE

Oleander. Common Oleander (lit.)

Family BORRAGINACEÆ

CORDIA Linnæus

Cordia sebestena Linnæus. **Geigertree.**

RANGE.—Southern Florida (Keys, Monroe County); Bahamas, West Indies, Guiana, New Granada.

NAMES IN USE

Geigertree (Fla.). Anaconda.
Sebestena.

Cordia boissieri A. de Candolle. **Anacahuita.**

RANGE.—From Texas (Rio Grande Valley) and southern New Mexico into northern Mexico.

NAME IN USE

Anacahuita (Tex.)

BOURRERIA P. Browne

Bourreria ovata Miers. **Strongback.**

RANGE.—Southern Florida (Keys, Dade County); Bahamas and West Indies.
NOTE ON NOMENCLATURE.—Designated by some authors as *Bourreria havanensis* (Roemer and Shultes) Miers and as *Beurreria ovata* Meyers.

NAMES IN USE

Strongbark (Fla.). Strongback (Bahama Islands.)

EHRETIA P. Browne

Ehretia elliptica de Candolle. **Anaqua.**

RANGE.—Western Texas (from upper San Marcos River to the Rio Grande); Mexico (Nuevo Leon and Coahuila to mountains of San Luis Potosi).

NAMES IN USE

Knackaway (Tex.).
Anaqua (Tex.).
Anama (southern Texas).
Yara (southern Texas).

Family VERBENACEÆ

CITHAREXYLON Linnæus

Citharexylon fruticosum Linnæus. **Fiddlewood.**

RANGE.—Southern Florida (from Cape Canaveral to the southern Keys).
NOTE ON NOMENCLATURE.—Formerly designated as *Citharexylon villosum* Jacquin, with which it seems to have been confused.

NAME IN USE

Fiddlewood (Fla.)

AVICENNIA Linnæus

Avicennia nitida Jacquin. **Blackwood.**

RANGE.—Florida coast (from St. Augustine to the southern Keys on the east coast and on the west coast from Cedar Keys to Cape Sable; Louisiana (islands in Mississippi Sound and on coast in Cameron and Terrebonne Parishes); on several of the West Indies, Bahamas.

NAMES IN USE

Blackwood (Fla.).
Blacktree (Fla.).
Black Mangrove (Fla.).

Family SOLANACEÆ

SOLANUM Linnæus

Solanum verbascifolium Linnæus.[68] **Potato Tree.**

RANGE.—Southern Florida (Meritt's Island to Biscayne Bay and to vicinity of Cape Sable); West Indies, Bahamas, Mexico, Central America, and in tropical sections of the Old World.

NAME IN USE

Potato Tree

[68] Formerly known only as a shrub. Within recent years, however, J. K. Small found it to be arborescent on Elliotts Key. Widely established in tropical countries and possibly only naturalized in Florida through cultivation.

Family SCROPHULARIACEÆ

PAULOWNIA Siebold and Zuccarini

Paulownia tomentosa (Thunberg) Steudel. **Royal Paulownia.**

RANGE.—Japan. Cultivated in the Middle Atlantic and Southern States and running wild in many localities from southern New York and New Jersey to Florida and in the Gulf States to Texas.

NOTE ON NOMENCLATURE.—Formerly designated as *Paulownia imperialis* Siebold and Zuccarini.

NAMES IN USE

Empress Tree.
Paulownia Tree.
Royal Paulownia.
Paulownia.
Princess Tree.
Blue Catalpa.

Family BIGNONIACEÆ

CATALPA Scopoli

Catalpa bignonioides Walter. **Common Catalpa.**

RANGE.—Believed to be indigenous only in southwestern Georgia, western Florida, central Alabama, Mississippi, and southwestern Missouri (Taney County), but widely cultivated for ornament and naturalized elsewhere in eastern United States as far north as southern New York; also in Europe.

NOTE ON NOMENCLATURE.—Formerly designated as *Catalpa catalpa* (Linnæus) Karsten, which is based on the oldest name (*Bignonia Catalpa* Linnæus).

NAMES IN USE

Catalpa (Mass., R. I., Conn., N. Y., N. J., Pa., Del., W. Va., N. C., S. C., Ala., Ga., Fla., Miss., La., Ark., Ky., Mo., Ill., Kans., Nebr., Iowa, Mich., Wis., Ohio, Minn.).
Indian Bean (Mass., R. I., N. Y., N. J., Pa., N. C., Ill.).
Beantree (N. J., Del., Pa., Va., La., Nebr.).
Catawba (W. Va., Ala., Fla., Kans.).
Cigartree (R. I., N. J., Pa., W. Va., Mo., Ill., Wis., Iowa).
Catawba-tree (Del.).
Indian Cigar-tree (Pa.).
Smoking Bean (R. I.).
Common Catalpa.
Candle-tree.

***Catalpa speciosa** Warder. **Hardy Catalpa.**

RANGE.—Through southern Illinois (from the Vermilion River) and Indiana, western Kentucky and Tennessee, southeastern Missouri, and northeastern Arkansas; elsewhere naturalized through cultivation, especially in southern Arkansas, western Louisiana, and eastern Texas.

NAMES IN USE

Hardy Catalpa (Ill., Iowa, Kans., Mich., cult.).
Western Catalpa (Pa., cult., Ohio, Kans., Nebr., cult., Ill., hort. and lit.)
Catalpa (R. I., N. Y., cult., La., Ill., Ind., Mo., Wis., Iowa, Nebr., Minn., cult.).
Cigartree (Mo., Iowa, cult.).
Bois Puant (La.).
Indian Bean (Ind.).
Shawneewood (Ind.).
Candle-tree.

CHILOPSIS D. Don

Chilopsis linearis (Cavanilles) de Candolle. **Desert-willow.**

RANGE.—Through southwestern (from near Laredo) and western Texas, southern New Mexico, Arizona (all divisions of the Coronado National Forest), southern Utah and Nevada, and southern California (San Diego County); northern Mexico and Lower California.

NAMES IN USE

Desert Willow (Calif., Tex., N. Mex., Ariz., Utah, Nev.).
Texas Flowering Willow (Tex.).
Flowering Willow (Tex.).
Spanish Willow (Tex.).
Catalpa Willow (Tex.).

ENALLAGMA Baillon

Enallagma cucurbitina (Linnæus) Urban. **Black Calabash-tree.**

RANGE.—Coast of southern Florida (Biscayne Bay, east of mouth of Miami River; also on Little River); West Indies; southern Mexico; west coast of Panama to Venezuela.

NOTE ON NOMENCLATURE.—Formerly designated as *Crescentia ovata* Burmann, with which it was confused, and as *Crescentia cucurbitina* Linnæus.

NAMES IN USE

Black Calabash-tree (Fla.).
Black Calabash (Fla.).

Family RUBIACEÆ

PINCKNEYA Michaux

Pinckneya pubens Michaux. **Fevertree.**

RANGE.—Coast region from South Carolina to Georgia and Florida (from Leon to Washington County). Very rare and local in its distribution.

NAMES IN USE

Georgia Bark (S. C., Fla.).
Fevertree (Ala.).
Florida Quinine Bark (Fla.).

EXOSTEMA Richard

Exostema caribæum (Jacquin) Roemer and Schultes. **Princewood.**

RANGE.—Southern Florida (Biscayne Bay to Dade County and southern Keys; frequent on Key West and Upper Metacumbe Key); West Indies, southern Mexico, and west coast of Nicaragua.

NAME IN USE

Prince-wood (Fla.)

CEPHALANTHUS Linnæus

Cephalanthus occidentalis Linnæus. **Buttonbush.**

RANGE.—New Brunswick to southern Florida; through Ontario and southern Michigan to southern Minnesota, eastern Nebraska, Kansas, Oklahoma, southwestern Arkansas (Big Creek) and eastern Texas (Rio Grande); southern New Mexico and Arizona; California; Mexico and Cuba.

NAMES IN USE

Button Willow (Ky.).
Button Bush (general).
Crooked Wood (Ky.).

Cephalanthus occidentalis pubescens (Rafinesque) Sargent. **Buttonbush.**

RANGE.—So far recorded from southern Indiana, southeastern Missouri, southern Arkansas, western Louisiana and eastern Texas (Brazos River).

NOTE ON NOMENCLATURE.—Formerly designated as *Cephalanthus pubescens* Rafinesque.

NAME IN USE

Buttonbush

GENIPA Linnæus

Genipa clusiifolia (Jacquin) Grisebach. **Seven-year Apple.**[69]

RANGE.—Southern Florida and Keys (Common on the dunes of the east coast, and on those of the Everglade and Florida Keys.—Fide J. K. Small); Bahamas and Cuba.

NOTE ON NOMENCLATURE.—Formerly designated as *Casasia clusiifolia* Urban

NAMES IN USE

Seven-year Apple. Velvetseed.

HAMELIA Jacquin

Hamelia patens Jacquin.

RANGE.—Southern Florida and Keys; West Indies and Brazil.

NOTE ON NOMENCLATURE.—Formerly known within our borders only as a shrub. Sometimes occurring as a small tree (J. K. Small).

GUETTARDA Linnæus

Guettarda elliptica Swartz. **Velvetseed.**

RANGE.—Southern Florida Keys (coast) and Everglade Keys (Royal Palm Hammock); Bahamas; Jamaica (coast).

NAMES IN USE

Nakedwood (Fla.). Velvetseed.

Guettarda scabra La Marck. **Roughleaf Velvetseed.**

RANGE.—Southern Florida and Keys; Bahamas and on a number of the West Indies.

NAME IN USE

Roughleaf Velvetseed

PSYCHOTRIA Linnæus

Psychotria nervosa Swartz. **Balsamo.**

RANGE.—Southern Florida (from the vicinity of St. Augustine southward to Dade County; also in Lake County); Bahamas and West Indies.

NAME IN USE

Balsamo

[69] This common name is based on a popular belief that the fruit requires 7 years in which to become mature. The fruit is, however, long persistent after maturity.

Psychotria nervosa lanceolata (Nuttall) Sargent. **Balsamo.**

RANGE.—Florida (known now only from the vicinity of St. Augustine).

NAME IN USE

Balsamo

Psychotria undata Jacquin.

RANGE.—Southern Florida (coast region and keys); West Indies.

Psychotria bahamensis Millspaugh.

RANGE.—Native of West Indies; escaped from cultivation in southern Florida (J. K. Small).

Family CAPRIFOLIACEÆ

SAMBUCUS Linnæus

Sambucus simpsonii Rehder.[70] **Florida Elder.**

RANGE.—Florida (from Duval County to Manatee County, and Lee County—on Sanibel Island).

NAMES IN USE

Florida Elderberry. Florida Elder.

Sambucus cærulea Rafinesque.[71] **Blueberry Elder.**

RANGE.—From southern British Columbia (Fraser River) and Vancouver Island to the southern borders of California; eastward to western Montana and Oregon (Cascades and Blue Mountains); in California to the Sierras; Utah (Wasatch Mountains); Colorado (Las Animas County); New Mexico (Sacramento Mountains).

NOTE ON NOMENCLATURE.—Formerly designated as *Sambucus glauca* Nuttall.

NAMES IN USE

Elder (Calif., Utah., Oreg.). Mountain Elder.
Elderberry (Calif.). Blue Elderberry.
Black Elderberry (Utah). Blueberry Elder.

Sambucus cærulea velutina (Durand and Hilgard) Rehder. **Velvet-leaf Elder.**

RANGE.—California (Shasta, Madera, and Kern Counties; Santa Catalina Island); Nevada (Washoe County).

NOTE ON NOMENCLATURE.—Originally characterized as *Sambucus velutina* Durand and Hilgard, under which it is still maintained by some authors.

NAME IN USE

Velvet-leaf Elder

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[70] *Sambucus simpsonii* Rehder is closely related to shrubby *Sambucus canadensis* Linnæus, the American or Sweet Elderberry, which occurs from Nova Scotia to Florida and westward to Manitoba, Kansas, and Texas, but from which it differs in its smaller pith, fewer leaflets (five to seven, the latter species having seven to nine), and in its smaller flower clusters. The existence of a treelike Elderberry in Florida appears to have been known for a good many years, but generally it has been treated as a form only of *Sambucus canadensis* Linnæus, and it is still so considered by authors. In the first edition of his Flora of Southern United States, Chapman gives its extreme height as 16 feet, but without mention of its arborescent character. J. K. Small (Flor. S. E. U. S., 1121, 1903) was perhaps the first author to note it as a small tree, sometimes 5 meters in height and 3 decimeters in diameter.

Sambucus intermedia Carrière probably should be added to the tree elders occurring in Florida. J. K. Small informs the writer (in a letter dated August 12, 1924) that, although usually a shrub, it frequently reaches in Florida a diameter of 1 to 2 decimeters, or more.

[71] *Sambucus cærulea* Rafinesque is 2 years older than Nuttall's name, and probably, therefore, should be taken up. Its validity is based on the Lewis and Clark reference to an "alder" with "pale sky blue" berries. So far as is now known there is but one blue-berried Elder in the Northwest, and this seems to be Rafinesque's species.

Sambucus cœrulea arizonica Sargent. **Mexican Elder.**

RANGE.—From southern New Mexico and Arizona (Santa Catalina, Santa Rita, Huachuca, Chiricahua, and Dragoon Mountains) to southern California.

NAMES IN USE

Elder (N. Mex., Tex.).
Elderberry-tree.
Mexican Elderberry.
Mexican Elder.

Sambucus callicarpa Greene. **Redberry Elder.**[72]

RANGE.—California (coast region from Marin County) northward to Alaska; extending eastward into the Cascade Mountains and Sierra Nevada (in the latter as far south as Amador County).

NAMES IN USE

Red Elderberry.
Redberry Elder.
California Tree Elder.

VIBURNUM A. L. de Jussieu

Viburnum lentago Linnæus. **Nannyberry.**

RANGE.—From Quebec (Riviere du Loup) to Saskatchewan; in the East, southward through the Northern States to Pennsylvania, Ohio, Indiana, (along the Appalachian Mountains) to West Virginia, and in its western range southward to Wisconsin, Iowa, eastern Nebraska, North Dakota (Turtle Mountain) and South Dakota (Black Hills); Wyoming (Big Horn Mountains); Colorado (Boulder County).

NAMES IN USE

Sheepberry (Vt., N. H., Mass., R. I., Conn., N. Y., N. J., Pa., Del., S. C., Ky., Ill., Iowa, Mich., Nebr., Minn., N. Dak., Ohio).
Nannyberry (Vt., N. Y., Mich., Ohio, Ont., Iowa, Miss., N. Dak.).
Wild Raisin (Me.).
Sweetberry (Minn.).
Sweet Viburnum (R. I., Tenn., Nebr.).
Viburnum (R. I.).
Black Haw.
Nanny-bush.

×Viburnum jackii Rehder. **Hybrid.**

RANGE.—To be looked for within the range of the supposed parent species, *Viburnum lentago* Linnæus and *Viburnum prunifolium* Linnæus.

Viburnum prunifolium Linnæus. **Blackhaw.**

RANGE.—From Connecticut (Fairfield County) and New York (lower Hudson River) to northern Georgia; westward through southern Michigan to Missouri and eastern Kansas.

NAMES IN USE

Black Haw (R. I., N. Y., N. J., Pa., Del., Va., W. Va., N. C., S. C., Ala., Ga., Ky., Mo., Ill., Ind., Ohio).
Sloe (Tenn.).
Sheepberry (N. J.).
Nannyberry (N. J.).
Stagbush.
Haw (Md., Va.).
Sweet Haw.

Viburnum rufidulum Rafinesque. **Rusty Blackhaw.**

RANGE.—Southwestern Virginia to Florida (Hernando County); westward to Missouri (central), eastern Kansas, Oklahoma (Ouachita and Rich Mountains), southwestern Arkansas and Texas (Brown County).

NOTE ON NOMENCLATURE.—Formerly designated as *Viburnum rufotomentosum* Small.

NAMES IN USE

Rusty Blackhaw.
Southern Blackhaw (lit.).

[72] The fruit is usually red, but occasional individuals bear chestnut-colored berries—rarely white.

Viburnum obovatum Walter.

RANGE.—Virginia to Florida. Plant gives off a strong characteristic odor.

NAME IN USE

Small Viburnum (lit.)

Family COMPOSITÆ

BACCHARIS Linnæus

Baccharis halimifolia Linnæus. **Groundsel-tree.**

RANGE.—Massachusetts (beaches and coastal marshes) to Florida and westward to Texas.

NAMES IN USE

Groundsel Tree (lit.). Groundselbush (lit.)

Baccharis glomeruliflora Persoon.

RANGE.—North Carolina to Florida. (In and about swamps. On the coast and in the interior of Florida trunks reaching about 4 inches in diameter—fide J. K. Small.)

FOREST SERVICE POLICY IN SELECTING STANDARD NAMES FOR TREES AND WOODS

In the interest of good trade practice and of protecting the consumer from obtaining inferior woods under the guise of misleading names, it is important that so far as practicable different trees and woods bear distinctive common names, that the names be uniformly used, and that concerted efforts be made to prevent adding to the present confusion through getting into circulation further misleading or ill-chosen names. In selecting standard common names of trees and woods for its own use, as well as for the purpose of furnishing helpful guidance to the interested public, the United States Forest Service has used the following principles:

1. The names of different trees and woods should be clear-cut and distinctive. They should not be ambiguous, confusing, or misleading.

2. So far as possible a tree and the lumber cut from it should be called by the same name.

3. Attempts to standardize common names are met at the outset by preexisting common names for most trees and woods—names that are hard to change and that must be given much weight. Preference should be given to the most widely used common name, provided it is not misleading. Artificially coined names should be adopted only as a last resort. This principle applies not only to native but to foreign woods. Aboriginal or native names, like mahogany and teak, should when practicable be used for imported woods instead of artificial or borrowed names, whose purpose often is to mislead the consumer.

4. Common names of trees and woods should, so far as possible, follow the major botanical groupings of trees. These groupings are based on inherent, recognizable resemblances; they constitute a logical, coherent, and universally recognized order and system To

base common names on superficial, often fluctuating, resemblances between botanically unrelated groups can only lead to confusion.

There are limits, however, beyond which common names can not follow botanical grouping. The botanical distinction of species may be based on characteristics too minute or inconspicuous to be easily recognized as the basis for distinct common names, as in the numerous species and varieties of Basswood. Or an improper common name may have become too firmly entrenched in usage to be upset, as, for instance, the name Cedar applied to Juniperus, Chamaecyparis, Thuja, and other genera.

5. When botanical differences among species and varieties of a genus are too slight to serve as a basis for distinctive common names, a group common name should be applied. Examples are found in the Basswoods, Willows, Hickories, Oaks, etc.

Within certain genera there are groups of species having common characteristics distinct enough to differentiate them as whole groups from other groups within the same genus. Examples are the red and white oak groups, the white and black ash groups, and the white and yellow pine groups. These group distinctions should be preserved in the names used for the individual members of each group, so far as possible.

It is natural and legitimate that group common names should be more extensively used for lumber than for the corresponding trees, because the trees with their bark, foliage, flowers, and other characteristics are often more readily distinguished than is the lumber cut from them.

6. Ordinarily a distinct generic common name should be used for each member of a botanical genus, as Spruce (Picea), Pine (Pinus), Oak (Quercus), Elm (Ulmus), etc., unless (*a*) firmly established usage of the same common name for two or more genera (such as the name cedar for Juniperus, Thuja, Chamaecyparis), or of two or more generic common names for different members of the same genus (as Butternut and Walnut for members of the genus Juglans), prevents the adoption of the principle but does not lead to deception; or unless (*b*) two or more genera are so closely related botanically and their woods are so nearly identical in structures, properties, appearance, value, and usefulness as to be to all intents and purposes the same. This latter exception rarely applies to native woods, but conceivably might apply to certain closely related woods of tropical genera, if they are not readily distinguished in practice, and if no deception results from the use of a group generic name. This principle is simply an extension of the principle of the group common name, as used in related species and varieties, to the larger groups known as genera. It is recognized that generic classification is not always fixed and unalterable, separate genera having sometimes been combined into one genus and single genera having sometimes been split up into two or more genera. When practicable, however, it would be preferable to follow the principle of a distinct name for each genus.

7. The common name of one species, group of species, or genus should not be used for that of another species, group, or genus in such a way as to be misleading, nor should it be used otherwise than as provided in paragraphs 5 and 6 above. Even a close superficial resemblance between woods widely separated botanically is no warrant for violating the principle of adhering to botanical groupings. The use of modifying terms, such as the State, region, or country in which the wood grows, or of some word descriptive of the wood itself, does not alone atone for borrowing a name, nor does it safeguard the consumer against confusion or even deception. The tendency is for artificially borrowed names (as distinguished from those borrowed through popular ignorance) to be used to create a market for unknown and very often inferior woods. The use of borrowed names must be guarded against more and more carefully as the importation of new and unknown woods increases; otherwise there will be endless deception. An example of such misleading practice is the name "Swamp Walnut" which has been applied to furniture made of Willow lumber. It seems fair for each wood to stand on its own merits and to make its way under its own colors.

STANDARD NAMES OF LUMBER AND OF THE CORRESPONDING TREES RECOMMENDED BY THE FOREST SERVICE

The following list is offered as a means of acquainting lumber users with the standard names employed by the Forest Service for lumber and for the trees from which it is cut. In large measure the names applied to the lumber correspond with those used for the trees. By reference to the footnotes lumber users can determine what other names are current in the trade. The list will also help to clear up a great deal of confusion among lumber consumers resulting from use in the trade of needlessly multiplied and often misleading names.

Names of lumber	Common names of the trees	Technical names of the trees
Northern White Pine [1]	Northern White Pine	*Pinus strobus.*
Western White Pine [2]	Western White Pine	*Pinus monticolo.*
Sugar Pine [3]	Sugar Pine	*Pinus lambertiana.*
Norway Pine [4]	Norway Pine	*Pinus resinosa.*
Western Yellow Pine [5]	Western Yellow Pine	*Pinus ponderosa.*
	Jeffrey Pine [6]	*Pinus jeffreyi.*
Lodgepole Pine [7]	Lodgepole Pine	*Pinus contorta.*
Jack Pine [8]	Jack Pine	*Pinus banksiana.*

[1] Also sold as Northern Pine; Canadian White Pine; Soft White Pine; White Pine; Wisconsin White Pine; Soft Cork White Pine; Minnesota White Pine; Soft Minnesota White Pine; Eastern White Pine.

[2] Also sold as Idaho White Pine; Soft Idaho White Pine.

[3] Also sold as California Sugar Pine.

[4] Also sold as Red Pine.

[5] Also sold as Pondosa Pine; Western White Pine; Oregon White Pine; Oregon Pine; California White Pine; Western Pine; Arizona Soft Pine.

[6] Usually marketed with Western Yellow Pine (*P. ponderosa*), which it closely resembles.

[7] Also sold as Tamarack.

[8] Also sometimes sold as Hudson Bay Pine.

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Names of lumber	Common names of the trees	Technical names of the trees
Southern Yellow Pine		
Loblolly Pine [9]	Loblolly Pine	*Pinus taeda.*
Shortleaf Pine [10]	Shortleaf Pine	*Pinus echinata.*
Longleaf Pine [11]	Longleaf Pine	*Pinus palustris.*
Pitch Pine [12]	Pitch Pine	*Pinus rigida.*
Pond Pine [13]	Pond Pine	*Pinus rigida serotina.*
Slash Pine [14]	Slash Pine	*Pinus caribaea.*
Virginia Pine [15]	Virginia Pine	*Pinus virginiana.*
Spruce Pine [16]	Spruce Pine	*Pinus glabra.*
Tamarack	Tamarack	*Larix laricina.*
Western Larch [17]	Western Larch	*Larix occidentalis.*
Eastern Spruce	Red Spruce [18]	*Picea rubra.*
	White Spruce [19]	*Picea glauca.*
	Black Spruce [20]	*Picae mariana.*
Sitka Spruce [21]	Sitka Spruce	*Picea sitchensis.*
Engelmann Spruce	Engelmann Spruce	*Picea engelmannii.*
Eastern Hemlock [22]	Eastern Hemlock	*Tsuga canadensis.*
Western Hemlock [23]	Western Hemlock	*Tsuga heterophylla.*
Mountain Hemlock	Mountain Hemlock	*Tsuga mertensiana.*
Douglas Fir [24]	Douglas Fir	*Pseudotsuga taxifolia.*
Alpine Fir	Alpine Fir	*Abies lasiocarpa.*
	Corkbark Fir	*Abies arizonica.*
	NOTE.—The wood of these two firs is probably not milled separately and need not be because of their close similarity in appearance and quality. Both should be marketed under one trade name, Alpine Fir.	
Eastern Fir [25]	Balsam Fir	*Abies balsamea.*
	NOTE.—The trade names Eastern Fir, Balsam, and Balsam Fir may possibly include wood of the Southern Balsam Fir (*Abies fraseri*), the wood of the two botanically distinct species being very similar in quality.	
Noble Fir [26]	Noble Fir	*Abies nobilis.*

[9] Also sold as North Carolina Pine; Virginia Pine; Arkansas Soft Pine; Southern Pine; Southern Yellow Pine.

[10] Also sold as Arkansas Soft Pine; North Carolina Pine; Shortleaved Yellow Pine; Southern Yellow Pine; Arkansas Shortleaf Pine; Southern Pine.

[11] Also sold as Florida Longleaf Yellow Pine; Southern Yellow Pine; Georgia Yellow Pine; Yellow Pine; Longleaved Yellow Pine; Southern Pine.

[12] Also sold as Southern Pine and Southern Yellow Pine.

[13] Also sold as Southern Pine and Southern Yellow Pine.

[14] Also sold as Southern Pine and Southern Yellow Pine.

[15] Also sold as North Carolina Pine and Spruce Pine.

[16] Also sold as Southern Pine, Southern Yellow Pine, and Southern White Pine.

[17] Also sold as Larch and Montana Larch.

[18] Also sold as West Virginia Spruce; Red Spruce; Adirondack Spruce; Canadian Spruce.

[19] Also sold as White Spruce; Canadian Spruce; Adirondack Spruce.

[20] Also sold as Black Spruce.

[21] Also sold as Yellow Spruce; Western Sitka Spruce; Silver Spruce; Sequoia Silver Spruce; Spruce; West Coast Spruce.

[22] Also sold as West Virginia Hemlock; Hemlock; Wisconsin White Hemlock; Pennsylvania Hemlock; Pennsylvania White Hemlock; Huron Pine.

[23] Also sold as West Coast Hemlock; Pacific Hemlock; Pacific Coast Hemlock; Pacific (western) Hemlock; Hemlock.

[24] Also sold as Douglas Yellow Fir; Oregon Fir; Fir; Red Fir; Pacific Coast Douglas Fir; Montana Fir; National Yellow Fir; Yellow Fir; Oregon Pine; Golden Rod Douglas Fir; Yellow Douglas Fir; "Santian" Quality Fir.

[25] Also sold as Balsam and Balsam Fir.

[26] Formerly and still sold as Larch.

Names of lumber	Common names of the trees	Technical names of the trees
California Red Fir [27]	California Red Fir	*Abies magnifica.*
Silver Fir [28]	Silver Fir	*Abies amabilis.*
White Fir [29]	White Fir	*Abies concolor.*
	Lowland White Fir	*Abies grandis.*
Southern Cypress [30]	Southern Cypress	*Taxodium distichum.*
Redwood	Redwood	*Sequoia sempervirens.*
Incense Cedar [31]	Incense Cedar	*Libocedrus decurrens.*
Northern White Cedar [32]	Northern White Cedar	*Thuja occidentalis.*
Southern White Cedar [33]	Southern White Cedar	*Chamaecyparis thyoides.*
Western Red Cedar [34]	Western Red Cedar	*Thuja plicata.*
Alaska Cedar [35]	Alaska Cedar	*Chamaecyparis nootkatensis.*
Port Orford Cedar [36]	Port Orford Cedar	*Chamaecyparis lawsoniana*
Eastern Red Cedar [37]	Eastern Red Cedar	*Juniperus virginiana.*
	Southern Red Cedar	*Juniperus lucayana.*
Butternut	Butternut	*Juglans cinerea.*
Walnut [38]	Black Walnut	*Juglans nigra.*
Pecan	Pecan	*Hicoria pecan.*
Hickory	Shagbark Hickory	*Hicoria ovata.*
	Bigleaf Shagbark Hickory.	*Hicoria laciniosa.*
	Pignut Hickory	*Hicoria glabra.*
	Bitternut Hickory	*Hicoria cordiformis.*
	Mockernut Hickory	*Hicoria alba.*
Willow	Black Willow	*Salix nigra.*
Cottonwood	Eastern Cottonwood	*Populus deltoides.*
	Black Cottonwood	*Populus trichocarpa.*
Birch	Yellow Birch [39]	*Betula lutea.*
	Sweet Birch	*Betula lenta.*
	River Birch	*Betula nigra.*
	Paper Birch	*Betula papyrifera.*
Beech	Beech	*Fagus grandifolia* (=*F. atropunicea*).
Chestnut	Chestnut	*Castanea dentala.*
White Oak	White Oak [40]	*Quercus alba.*
	Post Oak	*Quercus stellata.*
	Swamp Chestnut Oak	*Quercus prinus* (=*Q. michauxii*).
	Overcup Oak	*Quercus lyrata.*
	Swamp White Oak	*Quercus bicolor.*
	Bur Oak	*Quercus macrocarpa.*
	Chinquapin Oak	*Quercus muehlenbergii.*
	Chestnut Oak	*Quercus montana* (=*Q. prinus*).

[27] Also sold as Golden Fir.
[28] Also sold as White Fir and Larch.
[29] Also sold as Balsam Fir.
[30] Also sold as Red Cypress; Yellow Cypress; Louisiana Red Cypress; Gulf Red Cypress; Tidewater Red Cypress; Gulf Coast Red Cypress; White Cypress; Black Cypress; Cypress; Gulf Cypress.
[31] Also sold as Cedar; Roughbark Cedar.
[32] Also sold as White Cedar; Michigan White Cedar; New Brunswick Cedar.
[33] Also sold as White Cedar ("juniper").
[34] Also sold as Cedar; Red Cedar Pine; Washington Red Cedar.
[35] Also sold as Alaska Yellow Cedar.
[36] Also sold as Port Orford (White) Cedar.
[37] Also sold as Tennessee Red Cedar.
[38] Also sold as American Walnut.
[39] Heartwood of Yellow Birch sold as Red Birch.
[40] Also sold as West Virginia Soft White Oak; Forked-leaf White Oak.

Names of lumber	Common names of the trees	Technical names of the trees
Red Oak	Red Oak [41]	*Quercus borealis maxima* (=*Q. rubra Auth's, not L.*).
	Black Oak	*Quercus velutina.*
	Southern Red Oak	*Quercus rubra* (=*Q. digitata*).
	Swamp Red Oak	*Quercus rubra pagodaefolia*
	Pin Oak	*Quercus palustris.*
	Water Oak	*Quercus nigra.*
	Texas Red Oak	*Quercus texana.*
	Willow Oak	*Quercus phellos.*
Soft Elm	American Elm	*Ulmus americana.*
Gray Elm	Slippery Elm	*Ulmus fulva.*
Rock Elm	Rock Elm	*Ulmus racemosa.*
Hackberry	Hackberry	*Celtis occidentalis.*
	Sugarberry	*Celtis laevigata* (=*C. mississippiensis*).
Magnolia	Cucumber Magnolia [42]	*Magnolia acuminata.*
	Evergreen Magnolia	*Magnolia grandiflora.*
Yellow Poplar [43]	Yellow Poplar	*Liriodendron tulipifera.*
Red Gum [44]	Red Gum	*Liquidambar styraciflua.*
Sycamore	Sycamore	*Platanus occidentalis.*
Cherry	Black Cherry	*Prunus serotina.*
Locust	Black Locust	*Robinia pseudoacacia.*
Hard Maple [45]	Sugar Maple	*Acer saccharum.*
	Black Maple	*Acer nigrum.*
Soft Maple	Red Maple	*Acer rubrum.*
	Silver Maple	*Acer saccharinum.*
Buckeye	Yellow Buckeye	*Aesculus octandra.*
Basswood	Basswood	*Tilia glabra* (*T. americana*).
	White Basswood	*Tilia heterophylla.*
Black Gum	Black Gum	*Nyssa sylvatica.*
Tupelo	Tupelo Gum	*Nyssa aquatica.*
Ash (Black) [46]	Black Ash	*Fraxinus nigra.*
Ash (White)	White Ash	*Fraxinus americana.*
	Blue Ash	*Fraxinus quadrangulata.*
	Red Ash	*Fraxinus pennsylvanica.*
	Green Ash	*Fraxinus pennsylvanica lanceolata.*
	Biltmore Ash	*Fraxinus biltmoreana.*
	Oregon Ash	*Fraxinus oregona.*
Mahogany [47]	Mahogany	*Swietenia mahagoni.*

[41] Also sold as West Virginia Soft Red Oak.

[42] Also sometimes sold as Cucumber and sometimes in mixture with Yellow Poplar.

[43] Also sold as Soft Yellow Poplar, Poplar, and Whitewood.

[44] Also sold as Delta Red Gum. The sapwood of Red Gum is usually sold as Sap Gum.

[45] Also sold as Maple; Sapwood graded as "White Maple."

[46] Also sold as Brown Ash and Ash (Black or Brown).

[47] Also sold as Honduras Mahogany, Mexican Mahogany, San Domingo Mahogany, Cuban Mahogany, Costa Rico Mahogany, and Guatemalan Mahogany.

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